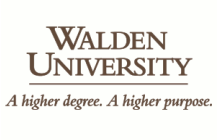

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The impact of visual art instruction on student creativity

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COLLEGE OF EDUCATION

This is to certify that the doctoral study by

Jeanie Parker

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2008

ABSTRACT

The Impact of Visual Art Instruction
On Student Creativity

Jeanie S. Parker

M.A.E., Cumberland University, 2005
B.S., Eastern Illinois University, 1987

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education
Teacher Leadership

Walden University
December 2008

ABSTRACT

This researcher examined the relationship between visual arts programs and creative thinking skills of high school students taking a foundations of music course and an introductory visual art course. A gap existed in the current literature concerning visual art experience and creativity among high school students. This study was based upon the theories of Eisner, Gardner, and Csikszentmihalyi concerning creativity and art experiences. This researcher used a quasi-experimental, nonequivalent control group design. A convenience sample of 2 high school fine arts classes was comprised of 1 visual art class and 1 foundations of music class, giving a sample of 50 high school students. The visual art class was the treatment group that received visual art instruction. The foundations of music class was the control group that received no visual art instruction. Pre and post assessments were measured using the Torrance Tests of Creative Thinking (TTCT) after 1 term of instruction. Data analysis using the *t*-test showed that a statistically significant increase was found in creative thinking skills among high school students with visual art experience. The findings could help educational stakeholders to improve visual art curriculum and to seek funding for visual art programs. The findings will lead to social change in high school art curricula as documented in the current literature to a deeper understanding of the importance of teaching subjects that encourage creative thinking at the high school level. Social change implications include: a) increased funding for visual art curriculum that will lead to positive social change by enhancing student creativity; b) encouraging further research on the importance of creativity skills among high school students; and c) increasing community awareness of the necessity of creative thinking in the global economy and the value of visual art experience in helping students gain creativity skills.

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DEDICATION

This study is dedicated to my husband Gary. Thank you for encouraging me to do whatever I wanted to do, believing in me, and knowing when to go to the "man cave" when I had the crazy eyes. Without your support, I would never have begun this journey, much less had the determination to finish. I love you. I also want to dedicate this study to my daughter Evan, and my son Adam. You will always be my greatest achievements and I am so proud of you both. You two are such a blessing to me and I love you BIG!

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This study would never have been completed without the encouragement, patience, and support from my committee chair, Dr. Peter Kiriakidis. His professionalism, knowledge, and sense of humor led me through the times when I didn't think I'd ever finish. To say thank you is not enough for all that he did for me during this process, but thank you. I'd also like to thank Dr. Maryann Morabito, my committee member for her sweet voice telling me it would be ok and being there whenever I needed to talk things through. Thank you Maryann.

My colleagues Lesley Reel and Sarah Jane Byars were instrumental in my achieving this goal. They understood my need to vent when things didn't make sense. Sarah Jane's calming nature settled me down, and Lesley held me up through the statistics maze, and trudged through all the classes with me one by one. I am so thankful for you both.

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SECTION 1: INTRODUCTION TO THE STUDY

The purpose of this quantitative study was to develop an understanding of creativity levels among high school students who take visual arts courses. The aim of this study was to develop a theory concerning student creativity and a visual arts experience. Specifically, this study examined the effect of visual art experience on creativity skills among high school students.

It was hypothesized that visual art instruction may have a positive effect on the creativity of high school students. The findings of this study may have implications for high school teachers teaching visual art subjects, and for curriculum developers who may be interested in the relationship between creativity and visual art curriculum. The findings of this study may also lead to an understanding between teaching a curriculum that encourages creative thinking, and the value of such a curriculum in education if students are to be prepared to compete in a global economy.

According to The Education Commission of the States (2005), 44 states and the District of Columbia require arts instruction in schools. This is in stark contrast with the No Child Left Behind (NCLB) Act of 2001 that considered the instruction of arts as being a core subject. Although the teaching of the visual arts (a) provides unique learning experiences and (b) is considered by law a core subject, many school districts ignore the value of a vibrant visual arts program.

Pink (2006) asserted, "At the Yale School of Medicine, students are honing their powers of observation at the Yale Center for British Art, because students who study paintings excel at noticing subtle details about a patient's condition" (p. 52). The

instruction of visual arts subjects benefits Yale medical students. Additionally, concerning the importance of creativity in the field of medicine, a highly academic and competitive field, it has been shown that creativity has the greatest predictive validity in determining the success or failure of medical students (Lippell, 2002). For the purpose of this study, it was assumed that the instruction of visual arts may benefit high school students. It was also hypothesized that the instruction of visual arts may have an effect on creativity skills of high school students exposed to an art curriculum.

With the implementation of high stakes testing as mandated by NCLB, visual arts programs, even though endorsed by NCLB, have been affected at the high school level to make room for subjects that are tested using standardized tests. For example, visual arts curriculum may not be taught or is ignored and in some cases eliminated from the school curriculum. Art education should be playing an integral part of a student's educational experiences. According to Eisner (2002), schools must understand that, "Not everything that matters can be measured, and not everything that can be measured matters" (p. 178). Eisner asserted:

> Yet the tasks that the arts put forward- such as noticing subtleties among qualitative relationships, conceiving of imaginative possibilities, interpreting the metaphorical meaning the work displays, exploiting unanticipated opportunities in the course of one's work- require complex cognitive modes of thought. (p. 198)

The Importance of Creative Thinking Skills

Art education may be considered of secondary importance because many school leaders are focused on the quest for higher standardized test scores. Hill (1999) wrote that the public has been conditioned to expect numbers in evaluating the educational

performance of students. According to Costa (1999), the public has been conditioned to expect that these numbers are an accurate account of a student's learning. Perrone (1991) stated, "We have evidence that the curriculum is becoming a matter of worksheets, workbooks and skills: higher order thinking and deeper levels of understanding are being sacrificed reading for meaning is being set aside; the arts are becoming nonexistent" (p. 5). The narrow band of cognitive functions tested using typical standardized tests does not include the wider band of divergent thinking that art experience teaches (Wakeford, 2004). Gardner (1990) noted that only in the contemporary epoch has the idea of universal schooling been a goal of society, with the teacher being held accountable for student achievement. As long as society views standardized tests as an accurate accounting of a student's learning, schools will be teaching to the test to measure up.

Additionally, creative thinking practices are in danger of becoming scarce due to the nature of the process. Creative ideas are most often unusual and out of the norm. Sternberg (2000) asserted, "When creative ideas are proposed, they often are viewed as bizarre, useless, and even foolish, and are summarily rejected. The person proposing them is often regarded with suspicion and perhaps even with disdain and derision" (p. 85). The successful teacher of creativity must be willing to withstand the onslaught of standardized testing blows to the curriculum as well as defend the uniqueness of the process. Beach (2007) wrote, Because there are no absolute answers, the ill-structured domain of art is a rich discipline for increasing learning about one’s values as well as opposing values, about different ways of thinking, about visual iconography and communication, and about enrichment of life through awareness of what a society

produces and values. (p. 35) This is important not only to the visual arts curriculum itself, but to the preparation of creative thinkers that are equipped for the demands of a global economy. According to Covington (1992), teachers need to inspire students by engaging curiosity, asserting that, "This is accomplished by providing sufficient complexity so that outcomes are not always certain" (p. 160). Student learning that involves creative, problem-solving thinking helps students to develop self-reflection skills and critical inquiry skills (Engle & Ochoa, 1988). Apart from written tests for measurement, educators need to be aware that other modes of expression such as visual, dramatic, the musical, and the poetic have unique contributions to make to the human experience. Visual art experience gives students the opportunity to think like an artist would, allowing for many correct responses instead of focusing on correct answers for an upcoming test. The arts are another way of knowing the world and are an important element in our society's health (Hetland, Winner, Veenema, & Sheridan, 2007). This type of knowing cannot be measured by a standardized test. The neglect of alternative evaluation is, "symptomatic of an aborted conception of education" (Eisner, 1997, p. 235).

What the students know at the end of the school experience relies heavily on what has been taught. Curriculum design hinges upon what the student must know. Eisner (2002) asserted, "What is not taught can be as important in someone's life as what is taught, whether explicitly or implicitly" (p. 159). Eisner asserted that a large void in the education of the whole student is created when the arts are taught poorly or left out of the curriculum completely. The Association for Supervision and Curriculum Development

(ASCD) wrote, "Today's student must be prepared unlike any generation before to think critically and analytically while acting with innovation and creativity" (2008, p. 7). Advocates for the arts must create a curriculum that fosters every aspect of a child's growth, not just those subjects that can be easily tested through a multiple choice, standardized test. In order to prepare students for the future, educators must prepare students for a world that the educators will never see. Creative thinking skills are critical in preparing students to compete in a global economy (ASCD, 2008). Students need time in the arts to hone these skills (ASCD, 2008).

This study generated data concerning creativity and the visual arts in order to create social change that can help bolster efforts to increase art education in schools. Educational policy makers rely on data to help them make decisions concerning what students must know and be able to do upon graduation. This study generated new knowledge concerning the benefits of art education and its effect of creativity, leading to positive social change by providing a means by which educators can increase student creativity. Additionally, the data generated from this study helps to address the problem of standardized testing requirements overshadowing the importance of visual art instruction at the high school level.

Problem Statement

This study was based on Eisner's (2005) theory, "The arts have distinctive contributions to make (to that end) through their emphasis on the expression of individuality and through the exercise and development of the imaginative capacities" (p. 24). The purpose for this study was to develop a theory concerning student creativity and

its relationship to visual arts experiences among high school students. The research problem addressed in this study was: Does visual art instruction have an impact on student creativity at the high school level? One problem with the emphasis on standardized testing is that this type of testing has taught students to work quickly and make hasty decisions (Eisner, 2005). For students without educational modifications, most tests have strict time restraints. This pressure from time constraints leads to students reacting impulsively, not considering more than one possibility (Feuerstein, 1999). According to Feuerstein, "A standardized test, conforming to psychometric objectives and properties, does not do justice to the child, to the subject, or to the science of understanding the human being" (p. 280). In order to fully develop a student's learning potential, "Policy, practice, and resources must be aligned to support not only the academic learning for each child, but also encourages experiences that encourage development of a whole child- one who is knowledgeable, healthy, motivated, and engaged" (ASCD, 2008, p. 8).

The purpose for a standardized test such as a college entrance exam is to determine the likelihood of student success at the college level. A new college entrance test from Yale University psychology department is called the Rainbow Project. This test is based upon three areas of creative thinking: humor, story-telling ability, and real life problem solving. For this test, the student is given five *New Yorker* cartoons and they must create humorous captions for each. Next, the students must write a story using only the title of the story as a guide. Lastly, they must decide how they would respond in difficult, real-life, challenging situations. Results of this test of creative thinking have

been twice as successful as the SAT in predicting student performance in college (Pink, 2005). If development of creativity is more important to the successful learner than choosing the right answer, then schools need to incorporate curriculum that nurtures creativity skills. The hypothesis for this study is that students that have had visual art experiences at the high school level will show significantly higher levels of creativity skills when tested than students without visual art experience at the high school level.

Purpose of the Study

The purpose of this study was to examine the relationship between high school visual arts experiences and the effect of these experiences on student creativity skills. Specifically, the purpose of this study was to answer the question if visual art instruction has a statistically significant effect on the creativity levels among high school students.

This study was based upon the theories regarding art, creativity, and the relationships between the two as discussed and researched by Eisner (2006), Gardner (2006), and Csikszentmihalyi (1996). This study added to the literature concerning the transfer effect of art experience on creativity levels among high school students.

The findings of this study shed light on curriculum decisions concerning visual art instruction that focuses on student creativity skills. The findings of this study may assist educational stakeholders in determining the levels at which visual art instruction fosters creative thinking skills of students with and students without high school visual art experience. The findings of this study may also assist educational stakeholders in improving visual art curriculum through visual art fully-funded programs at the high school level.

Nature of the Study

The alternative hypothesis was that the creativity scores will be significantly higher for students who were enrolled in a high school visual arts course than for students who were not enrolled in a high school visual arts course. The null hypothesis was that there will be no significant difference in the creativity scores of students who were enrolled in a visual arts course and students who were not enrolled in a high school visual arts course.

The purpose of this quantitative study was to examine the relationship between visual arts high school curriculum and the creativity skills of students after a successful experience in a visual arts class. The independent variable was instruction of the visual arts curriculum. The dependent variable was the creativity scores of the participants. Experience in a visual art class was defined in this study as the successful completion of one term of one or more art classes by a high school student at the introductory level. The dependent variable was measured using Torrance Tests of Creative Thinking (TTCT) (see Appendix A). The researcher administered the test that determined the student's creativity level.

The study used a quasi-experimental, nonequivalent control group design. The researcher collected pretest data during the first two weeks of classes, after all scheduling conflicts were been resolved. The posttest data was collected following the one term treatment period. Due to the impossibility of random assignments of students to elective fine arts classes, nonequivalent groups were used. Two intact fine arts classes were used. One class consisted of a foundation of music class and was the control group. The second

class consisted of introductory visual art students and was the treatment group. The study's internal validity was improved by the use of a control group. A pretest and posttest of the Torrance Tests of Creativity (TTCT) provided data to determine if a statistical difference in creativity between the two groups existed after treatment.

The researcher administered TTCT (1998) to both classes of students two times, allowing a pre and post test data collection. The sample size was $n = 25$. Two classes of students that were enrolled in an introductory fine arts class were tested for creativity using the TTCT at the beginning of the semester, before any instruction. After one term of instruction, the students were tested again using the TTCT to determine if any growth in creativity occurred.

Research Question and Hypothesis

Research Question

Does visual art instruction have a statistically significant effect on the creativity levels among high school students?

Alternative Hypothesis

The creativity scores will be higher in students that have had high school visual art experience than without high school visual art experience.

Null Hypothesis

There will be no significant difference in the creativity scores of students who were enrolled in a high school visual arts course and students who were not enrolled in a high school visual arts course.

Theoretical Framework

There seems to be natural relationship between creativity and the creation of artwork. A large gap in the literature exists regarding measuring the effect that art experience has on creativity among students. The aim of this study was to add to the limited research connecting these two areas of cognitive growth. This study was based upon the theories regarding art, creativity, and the relationships between the two as discussed and researched by Eisner (2006), Gardner (2006), and Csikszentmihalyi (1996).

According to Eisner (2002), teaching more of any subject can lead to higher standardized tests such as the SAT. He believed that arts researchers often make the mistake of trying to show that art experience benefits the student in test-taking abilities. Eisner asserted that what the arts contribute to the growing mind is specific to art; decision making, interpretation, inspiration, and creativity.

A theory and research question from Eisner (2002) is, "Does experience in the arts confer an advantage on students on tasks outside those in which the arts experience was secured?" (p. 218). He wrote, "If experience in the arts effected in a positive way the performance of students in the so-called basics, the arts would, some believe, become important at last, because they would contribute to what people really care about" (p. 219). Eisner explained, "Really good studies of such transfer are scarce" (p. 219). This study attempted to add to the literature quantitative data concerning the transfer effect of art experience on creativity.

Gardner (2006) believed that the U. S. educational system has never been on the quest to educate for creativity, although in his theory of multiple intelligences, creativity takes a prominent role. Gardner asserted, "Fostering creative individuals is a desirable goal for an educational institution, it is important that this goal be pursued" (p. 177). Gardner's theory of multiple intelligences and the need for arts in education has led to research such as Arts PROPEL and Project Zero. Arts PROPEL is a curriculum and assessment approach to arts education at the high school level (Gardner, 2006). Project Zero is a Harvard based research project aimed at the fostering of artistic thinking in the educational system. Through Gardener's theory concerning art and the importance of art education in the developing of multiple intelligences, he has discovered that artistic development can significantly change how a student thinks. Gardner (1990) believed that through artistic encounters, a student gains the skills of creating and reflecting, although these skills are not easily tested by standardized tests. Gardner wrote concerning researching what is actually being learned in art classes, "What is needed for accountability purposes is evidence that, in general, a cohort of students is advancing along dimensions of knowledge and practice considered knowledgeable in experts in the field" (p. 47). The aim of this study is to add to that evidence.

Csikszentmihalyi 's (1996) theory suggested that art experience and creativity are intimately connected and that further research is necessary to validate his assertion. Csikszentmihalyi (1997) wrote concerning this necessary research, "the arts must live in an uneasy position of dependency until their specific contribution to education can be voiced with greater clarity and given a conceptual legitimacy on a par with the one

Descartes gave to reason" (p. 1). Creativity and flow according to Csikszentmihalyi are important to psychology and discovery of invention (1996). In arts assessment, many art education researchers balked at the idea of quantitative assessment. Csikszentmihalyi (1997) believed, "In my opinion, trying to give numerical expression to events or experiences does not destroy their essence, as long as one remembers that quantification is just a form of description. Statistics, although often used to mystify and confuse, can also be powerful tools of clarification" (p. 1). It was an aim of this study to provide quantitative data to statistically describe the effect of art instruction on creativity among high school students.

Operational Definitions

Abstractness of titles: in this study was defined as the unique verbal representation of the drawing; the degree beyond labeling based on the ideas that abstractness requires creative thought. It measures the degree a title moves beyond concrete labeling of the pictures drawn (Torrance, 1966; 1990).

Art experience: in this study was defined as a student having completed a term of visual art instruction at the introductory level. Dewey (1934) explained the difference between experience and an experience as, "We have *an* experience when the material experienced runs its course to fulfillment" (p. 35). Both the artist and the viewer experience an art experience.

Creativity: was defined as, "The cultural equivalent of the process of genetic changes that result in biological evolution, where random variations take place in the chemistry of our chromosomes, below the threshold of consciousness" (Csikszentmihalyi,

1997, p. 7). Csikszentmihalyi believed that in order for creativity to be achieved, the student must first learn something in order for the idea to be changed, inspired or altered. Eisner (2002) described creativity as a new way of solving a problem.

Creative thinking: can be described as a way of divergent thinking. Eisner (1997) stated, "The tasks the arts put forward- noticing subtleties among qualitative relationships, conceiving of imaginative possibilities, interpreting the metaphorical meanings the work displays, exploiting unanticipated opportunities in the course of one's work- require complex cognitive modes of thought" (p. 35). Creative thinking skills necessary for visual appreciation are often a concealed skill. Eisner asserted, "The assessment of experience or appreciation of a work of art requires the making of inferences, of moving from what one can observe to what one can infer" (p. 222).

Elaboration: in this study was defined as the number of details used to extend a response (Torrance, 1966; 1990).

Fluency: in this study was defined as the number of relevant responses; shows and ability to produce a number of figural images (Torrance, 1966; 1990).

Originality: in this study was defined as the number of unusual yet relevant ideas determined by statistical infrequency, shows an ability to produce uncommon or unique responses. The originality lists were prepared for each item on the basis of normative data, which are readily memorized by scorers (Torrance, 1966, 1990).

Resistance to premature: closure in this study was defined as the degree of psychological openness; based on the belief that creative behavior requires a person to

consider a variety of information when processing information and to keep an open mind (Torrance, 1966; 1990).

Torrance Tests of Creative Thinking: were designed by Torrance, and are the most widely used tests for creativity. The test has two forms; verbal and figural. Each form has a norms-technical with national norm tables with standard scores and national percentiles by grade and age.

Assumptions and Limitations

A limitation of the study was that the researcher is also a teacher in the school in which the study will take place. The researcher administered the creativity test in order to eliminate teacher bias. Additionally, the researcher scored the test using the TTCT scoring manual (see Appendix B). Another drawback of this research was that the study was confined to a South Eastern, suburban high school. Further limitations include that the researcher only tested a small percentage of the entire student population as well as the familiarity of the test during the posttest assessment. Finally, the students had little motivation to be honest or give a best effort on the test.

Significance of the Study

Although standardized testing has become the measurement by which academic achievement is determined, a new type of thinker may become necessary. Pink (2005) wrote, "The future belongs to a very different kind of person with a very different kind of mind-creators and empathizers, pattern recognizers and meaning makers. These people-artists, inventors, designers - will now reap society's richest rewards and share its greatest joys" (p. 1). According to Sternberg (1985), concrete theories exist concerning attributes

connected to creativity. These attributes are listed as: non-entrenchment, aesthetic taste and imagination, perceptiveness and ability to question conventions, inquisitiveness, and intuition.

Arts integration can lead to an enriched curriculum. Creative activities and an opportunity for students to create new and personal applications can help foster student creativity (Eisner, 2002). For instance, artists and teachers in Chicago identified parallel processes in an art-related activity and an academically oriented activity in order to engage cognitive processes (Burnaford, Aprill, & Weiss, 2001). These educators reported that combining the arts with other subject matters seems to generate a resonance and create deeper learning in both subjects.

Arts influence can help the student solve problems in an original manner as well as find his/her own voice. Students with art experience can learn to find inspiration and influence from all aspects of education. Lynch (2007) wrote, "Meaning is created, represented, and interpreted through the use of different semiotic systems, which learners naturally employ and they make sense of the world" (p. 34). Connecting the learning to personal meaning can help the student become a creative thinker.

Gardner (2006) wrote, "In our global, wired society, creativity is sought after, cultivated, praised" (p. 77). He attested, "Companies that do not embrace innovation will soon be taken over by companies that do" (p. 78). Gardner contrasted the differing positions that the United States and China have taken concerning the arts. East Asia, according to Gardner, has become, “more receptive to teaching the arts in school, while the United States have moved toward uniform curricula and standardized tests” (p. 86).

Curriculum that prepares students for the global marketplace must include courses that improve creativity skills (Pink, 2005). This study revealed that a relationship exists between visual art experiences and creativity skills among high school students. Because this study revealed that visual art has a positive effect on creativity skills among high school students, visual art should be included in a complete curriculum as a means to enhance student creativity, preparing students for the future, therefore leading to positive social change.

Conclusion

The findings of this study help to drive curriculum decisions concerning visual art classes at the secondary level while also determining whether such a course have a positive effect on a student's creative future. In an era of data-driven decision making, results of this study can help determine the levels at which visual art instruction fosters creativity skills. When students believe that they have a connection with their subject, and an opportunity to contribute creatively, learning can be most enjoyable. Eisner (2004) wrote, "Promoting a love affair between the student and his or her work is one of our schools' most important aims" (p. 196). The findings of this study indicated a statistically significant difference in the creative thinking skills of students with and students without high school visual art experience. This finding could help bolster efforts to improve visual art curriculum offerings as well as provide evidence that visual art deserves to be a fully-funded program in American schools. Additionally, the results of this study could lead to social change as methods to understand and develop creativity are developed and documented. Chapter 2 of this study will include a literature review including themes and

theories concerning visual art and creativity. Chapter 3 will address the methodology of this study, including the hypothesis, null hypothesis, sample, and method of data collection. Chapter 4 will discuss the findings of this study, and the statistics that show that visual art experience does have a positive impact on increasing creativity levels among high school students. Finally, Chapter 5 will summarize the study, examine the need for future study, and the implications of the study.

SECTION 2: LITERATURE REVEW

Introduction

The purpose of this chapter was to review the literature concerning the effects of visual art education on student creativity. The review will discuss the historical role of art education in American Public schools. Next, the literature regarding the introduction and rationale for including visual art education in the curriculum will be addressed. Abundant literature concerning current themes and theories by Dewey (1936), Eisner (2002), Effland (2002), Gardner (2005, 2006), Costa (1999), and Torrance (2001) is presented. Research showing connections between art education and student creativity skills is cited. The mandates of NCLB and its effects on visual art education are examined.

The Foundation of Art Education

According to Dewey (1936), the creation of a work of art is not so much about the piece of work itself, but what the artist learns while creating. Dewey understood the deep connection between creating, experiencing, and learning in education. Gullatt (2008) asserted, "This form of learning allows students the opportunity to expand their imaginations and creativity while gaining new information" (p. 19). Concerning art and the effect of the experience, Dewey stated, "Esthetic experience is a manifestation, a record, and celebration" (p. 43). It is this independent, artistic experience, often only understood by the artist, which makes art both meaningful and difficult to measure. Perhaps the difficulty in measuring artistic learning and creativity has been a detriment to the furthering of art education. Subjects that are easily tested have the advantage of quickly showing progress or the need for remediation (Gullatt, 2008). Progress in art

instruction often shows itself in the form of creativity, in addition to technical artistic skill. Dewey wrote, "Since the actual work of art is what the product does with and in experience, the result is not favorable to understanding" (p. 3). The difficulty in measuring learning or an increase in creative thinking has made the study of the effect of art on creativity virgin ground. In Dewey's time, high-stakes testing mandates were unknown. Yet there is an underlying tone in Dewey's (1936) statement that because the creation of art and the experience gained from it cannot be easily measured, the elusiveness of the process becomes its own obstruction. Dewey understood that the difficulty in measurement of aesthetics would one day lead to the lack of funding allotted to art programs in American schools.

Art and Assesment

Eisner (2004) asserted, "Not everything that matters can be measured, and not everything that is measured matters" (p. 178). Indeed, because art education cannot be easily measured, it is often referred to by curriculum designers and state education departments as non-academic. Darts (2004) wrote, "By introducing students to the world of socially engaged artists, as well as to other forms of visual representation, art educators can begin to challenge learners to reconsider the complexity of their daily visual experiences" (p.315). Assessment has long been a point of contention among art teachers. Many art educators feel that in order to validate art education, assessment must be on a parallel course with math and reading assessment (Education Commission of the States, 2005). Soundy, Guha, and Qui (2007) asserted, "Since art is universal and has no national or cultural boundaries, it offers a supportive environment for children to expand their

expression and range of learning approaches" (p. 7). Expression, supportive environment, and allowance to explore a range of learning approaches are not easily measured.

This allowance of a supportive environment is of little value in the testing-driven educational world in which art educators find themselves. Kaufman and Sternberg (2007) asserted, "In a nation in which standardized tests are omnipresent, it may seem odd to seek recognition and reward for something as seemingly ineffable as creativity" (p. 57). There is a gap being created between those the promote teaching the whole child and those that promote teaching to the test. Diaz-Lefevre (2006) wrote, "Memorization and regurgitation become standard, and often little value is placed on remembering the material, much less understanding it" (p. 135).

Another camp of thought asserted that art assessment is subjective, and must be assessed in a personal way. Freedman (2007) asserted, "Art educators have long known that art helps students understand the human condition through their investigations of themselves, particularly when students find their artistic strengths and are allowed to develop them" (p. 204). Eisner (2002) believed that solutions to problems need not be identical, therefore eliminating the precision of the standardized method of achievement assessment. Standardized testing however, is inexpensive, clean, and quick; none of which is a goal of art assessment. Ferch, St. John, Reyes, & Ramsey (2006) wrote, "Assessment leans heavily on end-of-chapter, multiple-choice, and true-false tests and standardized assessments. Correct answers are often valued over creativity, risk taking, and deeper understanding of concepts" (p. 149). The arts are often believed to be emotional, not cognitive (Eisner, 2002). The personal and emotional component of the

arts is what causes the arts to be powerful as a cognitive learning tool (Rabkin & Redmond, 2006).

Concerning the nature of art education, Hwang (2006) wrote, "The characteristic nature of arts education is interdisciplinary. Throughout history and across cultures, the goals, ideals, visions and context of arts education have undergone revolutionary changes to meet the needs of the existing society in which it is practiced" (p. 176). Math and reading scores are now considered by the NCLB law as the sole indicator of student learning. Supporters of high stakes testing and accountability argued that, “Such policies will increase equity by ensuring that *all* students achieve at some pre-designated level of performance” (Hamilton, 2003, p. 41). The determination of what is and is not worthy of funding due to testing is often left up to those who do not understand the importance of a vibrant art curriculum. This lack of knowledge concerning the value of art in our schools can lead to a reduction in funding as a push is made to test more important subjects. According to Ashford (2004), a reduction in arts programs occurred due to years of budget cuts and state budget deficits (Massie, 2004; McElroy, 2005) in addition to dwindling private funding sources.

A side effect of this narrow focus of assessment has been a skewed curriculum. According to Cawelti (2006), this constricted curriculum has resulted in a serious imbalance, cheating students out of a rich and varied education. In its 2006 study concerning the effect of NCLB on school districts, the Center on Education Policy cited evidence of a narrowing curriculum. The findings showed 71% of school districts reported that they have reduced instructional time in at least one subject to make more

time for reading and mathematics. In some districts, struggling students receive double periods of reading or math or both. This causes some students to miss certain subjects altogether. Hargreaves (2003) echoed these sentiments, "Along with the elimination of diversity, standardized reforms are also bringing an end to creativity and ingenuity in education" (p. 115). Hargreaves wrote about living in a knowledge economy and a knowledge society, based on serving the private good. Hargreaves went on to explain how knowledge economy and knowledge society are both driven by creativity and ingenuity, and educators must teach our students how to be creative and flexible. According to Hargreaves, "Yet instead of fostering creativity and ingenuity, more and more school systems have become obsessed with imposing and micromanaging curricular uniformity" (p. 1). The need for teaching creativity and flexibility is in direct opposition to mandated standardized testing performance. Concerning funding, tests scores, and art, Hewett (2005) wrote, "We receive funds much more easily when we frame our requests in terms of providing the student with relevant life skills such as those for contemporary visual technology and constructing and deconstructing visual knowledge and communication" (p. 8).

Those making curriculum decisions concerning ways to enhance student academic gain will find the arts to be a research-based mechanism with which to provide assistance and enhancement for achieving increased student academic success, not an area to receive either an indirect or direct cut in funding (Goldsmith, 2003; Finch, 2004). Testing policy theory is emerging that predicts that a high-stakes testing system will require a greater share of instructional time and resources to be devoted to tested subjects,

while untested subjects will suffer (Linn, 2000; Madaus, 1988). Linn (2000) wrote, "The arts are not tested for high stakes purposes in any US state; thus, we would expect to see a decrease in the emphasis placed on the arts where high-stakes exams are in place" (p. 15).

Rose and Gallup (2004) reported that 81% of the public is afraid that focusing testing entirely on scores in English and math will mean less time will be devoted to untested subjects, including the arts. This public apprehension has not yet been matched by thorough research on the impacts of high-stakes testing on the arts. It is imperative that in this point in America's educational history that those that understand the importance of a vibrant visual art program create research and numbers to support their cause. Without statistics and research to inform the public of the impeding dismissal of art programs in the schools, and what students stand to lose in their educational experience, it appears that art could be replaced with testing remediation in the curriculum of many school systems (Linn, 2000).

Defining Creativity

Sternberg and Williams (1996) stated, "Creativity is as much an attitude toward life as a matter of ability. It is hard to find in older children and adults because their creative potential has been suppressed by a society that encourages intellectual conformity" (p. 1). Perhaps this encouragement of intellectual conformity has its roots in high stakes standardized testing. Sternberg and Williams believed that the stifling of creativity in children begins when they are required to color within the lines of coloring books. Sternberg and Williams also believed that there are three basic types of creative

thinking: synthetic ability analytic ability, and practical ability. Synthetic ability is the ability to generate novel and interesting ideas. Analytic ability analyzes and evaluates ideas. Practical ability translates theory into practical accomplishments and to recognize that an idea might have a potential audience. According to Sternberg and Williams the ability to seamlessly blend all three types of creativity makes one truly creative.

The creative process is a complex one, not easily definable in words (Westwood & Lowe, 2003). According to Westwood and Lowe, creativity is a matter of the cognitive process at the individual level. Westwood and Lowe state that other factors that might influence creativity aside from innate ability could be culture and social interactions. It is possible that what creativity is in the Western world is not defined the same way in other cultures. Westwood and Lowe wrote, "There is also the potential for a fruitful dynamic as cultures as their systems encounter and inter-penetrate each other. These are edges and points of intersection where great opportunities exist for creative abrasion" (p. 254). A possibility for future study could be the comparison of creativity scores among high school students with visual art instruction to creativity scores among high school students with visual art instruction from different cultures. For the purpose of this study, visual art education and the impact of the experience on creativity among high school students is limited to a high school in the South Eastern part of the United States.

Effects of Instructional Time on Creative Thinking

A look at time allocated to various subjects in schools gives precious insight into the hierarchy of curriculum. Magnet schools have been created to help students with interest in the arts, math, or science, realize their potentials. Schools with an arts focus,

especially magnet schools, attempt to serve academic, arts, and equity goals, often quite successfully (Wilson). According to Wilson, magnet schools are marked by strong missions, positive academic, creative and affective outcomes, their openness to public analysis, and soaring student motivation. The integration of art serves a larger cultural understanding and providing a means for change, while keeping art education at the focus of the curriculum. A strong arts focus could help show how the arts are not inferior to other academic areas in the curriculum. Rather, by incorporating art into the course objectives, art can be integrated into the curriculum without displacing art (Mishook & Kornhaber, 2006). These traits are rarely found in non-arts-focused public schools (Wilson, 2001).

There is; however, an exception to this statement in the form of the Dallas Independent School District and its general superintendent, Hinojosa. The Dallas Independent School district hired 140 new art teachers (Deasy, 2008). The Dallas Independent School districts, according to critics, risked the lowering of standardized high stakes test scores by incorporating more art education into the school day. Hinojosa believed that art education helped students think more creatively and to make connection with their work, which ultimately led to better understanding of the subject, and he was willing to make the changes necessary to support his belief. Hinojosa said, “"When they connect with what they're learning, it's magical. I believe it is important … to make that magical connection for every child, every day" (p. 13). Hinojosa asked a nonprofit organization called Big Thought to lead a school community process to increase art experiences available to students. Big Thought now manages the Dallas Arts Learning

Initiative, which recently was the recipient of the Ford and Wallace foundations grants. The change in attitude and support of art education from the Dallas Independent school district, embraces a growing national awareness revealed in public opinion polling and national reports demanding that schools renew their commitment to fostering the imaginative capacities that will restore America's role as a leader in innovation and creativity (Deasy).

Along with Deasy (2008), Pink (2005) agreed that art must be placed within the Science, Technology, Engineering and Math (STEM) of education for its role in encouraging imagination and creativity. Deasy stated, “Imagination, innovation and creativity have been the foundation that catapulted the United States into a world leadership role” (p. 14). He continued, “Our leadership is threatened to the extent we do not revitalize and sustain these capacities in ourselves and in the students we teach” (p. 15). Outside of the school walls, the arts are integrated into our society and are at the root of nearly every aspect of American life (Deasy). Students should be prepared to think creatively in order to compete in this global society. Art experience is a key component to teaching students to think creatively.

The connection between time spent on task and learning is considerable (Rosenshine, 1996). According to Eisner (1991), the arts are viewed largely by school systems as emotive, not cognitive subjects and are therefore not allotted valuable class time. Not allowing time for thinking and decision-making is at odds with educating the whole child, but it has become the norm. According to the Center on Educational Policy (CEP)(2007), there is the grim evidence that 16% of school districts decrease

instructional time in art and music in order to allow more time for tested subjects. This results in a decrease in art classes of 57 minutes per week. In order to reinforce the positive impact of art and music on educating the whole child, the CEP recommended,

> Encourage states to give adequate emphasis to art and music. States should review their curriculum guidelines to ensure that they encourage adequate attention to and time for art and music, and should consider including measures of knowledge and skills in art and music among the multiple measures used for NCLB accountability. (p. 2)

Eisner (1991) wrote, "Any conception of intelligence that omits the ordering of qualities through direct experience is neglecting a central feature of intellectual functioning. But no intelligence test that is published today includes such tasks" (p. 315). With teachers frantic to raise student test scores and teaching to the test, it is no surprise that creativity and intellectual curiosity have not often been the focus of professional development, since it is not conventionally measurable. Csikszentmihalyi (1996) wrote, "If too few opportunities for curiosity are available, if too many obstacles are placed in the way of risk and exploration, the motivation to engage in creative behavior is easily extinguished" (p. 11). The snuffing out of creativity is an easy, but dangerous thing to do. Csikszentmihalyi believes that to have a good life, humans need a positive goal to keep going. Creativity provides an exciting, exhilarating way of living.

Csikszentmihalyi went on to write, "For better or for worse, our future now is directly tied to human creativity. The result will be determined in large part by our dreams and by the struggles to make them real" (p. 6). If Csikszentmihalyi's research is correct concerning his theory of creativity, then teaching creative thinking and problem solving should be at the forefront of the curriculum. Csikszentmihalyi (1996) noted that it

is strange the effect that school plays in the lives of very creative people. He makes the distinction clear however, between the school experience and the influence of a teacher or teachers on a creative person's education. He believes that a teacher is often the inspiration and the catalyst for the student's creative achievements. According to Csikszentmihalyi, two main qualities stand out. He stated, "First, the teachers notice the student, believed in his or her abilities and *cared*. Second, the teacher showed care by giving the child extra work to do, greater challenges than the rest of the class" (p. 174). Many outstanding creative adults remember extracurricular activities and individual teacher interactions rather than classroom instruction as having an impact on their creative abilities.

Benefits of Creative Thinking in Adulthood

According to Puccio and Murdock (2001), "Creative thinking is an essential life skill. It is a rational process that enables people to successfully produce novel and useful responses to open-ended challenges and opportunities" (p.70). The authors also agreed that creative thinking is not rare for normally functioning people, and can be taught and enhanced. Carnevale, Gainer, and Meltzer (1990) conducted research to determine basic skills necessary in the workplace. "One of the top seven skills identified as essential was creative thinking and problem solving" (p. 69). Researchers of creativity tended to agree with the school of thought that creativity is a skill that transcends domains and is a general skill held by a select few (Nelson & Rawlings, 2007). Pink (2006) asserted that concerning the necessity of creative thinkers in the workplace, "Don’t tell your kids to become doctors, lawyers or programmers. Tell them to become artists, designers,

inventors, counselors and caregivers" (p. 32). According to Pink, the future of the U. S. economy will rely on creative thinking skills, not the ability to produce products. He suggested that because Asia has become a global producer of inexpensive technology, the United States must become a nation of right-brain, creative thinkers. Henriksen Andrews (2003) believes that when a student's passion for the visual arts is nurtured, a future generation of art makers and art supporters is created. Bresler (2006) suggested, "The arts provide rich and powerful models for perception, conceptualization, and engagement for both makers and viewers" (p. 52). The development of artists and art supporters could lead to an expanded view of creativity, allowing future generations the advantage of sophisticated creative thinking skills and the ability to compete in a global marketplace.

Questions Concerning the Benefits of Teaching Creative Thinking

Opponents of teaching creativity skills might make the argument that with so many schools struggling to perform on standardized tests, why spend time teaching critical, creative thinking? Can teachers take the chance of students questioning their lessons or creating an entirely new answer when there is such a pressing need to perform on standardized tests? Ross (2007) asserted, "One of the pleasures of the arts is that the most persuasive arguments to legitimise them in the curriculum often result in illuminating their hidden dimensions" (p. 274). Additionally, Reid and Solomonides (2007) suggested that, "The mark of creativity is the ability not to solve a problem, but to be able to 'discover a problem.' This has important implications for teachers of design as it implies that creative assessment methods should give students an opportunity to first find a problem and then solve it" (p. 30). Teaching creative thinking requires teaching

students to evaluate statements, not necessarily a skill that teachers want students to practice during class, or during a test. Illeris (2005) stated, "Young people engage in encounters with art as active participants rather than passive viewers. Performances, installation art, video and computer art are preferred to traditional art forms"(p. 235). Illeris continued, "Being hooked, experiencing otherness, participating in social exchanges and engaging in meta-reflective processes of learning seem to underline all the positive learning experiences that young people have in their encounters with contemporary art" (p. 239). Lindstrom (2006) wrote, "The underlying assumption appears to be that the more information the school provides and the more activities the students carry out, the better. If much is crowded into the syllabus, teaching breaks down into small segments and knowledge becomes fragmented" (p. 66). The task for teachers is to balance the subjects that will be tested by state mandates and those subjects that are important, but are not tested.

Contradictions Between Testing and Creative Thinking

The research showed that creative thinking is a valuable skill that should be taught in schools. Costa (2000) wrote, "The critical attribute of intelligent human beings is not only having information but also knowing how to act on it" (p. 80). Costa described habits of mind as the ability to behave intelligently when faced with problems. Costa explained that there are five key characteristics of people that employ the habits of mind: inclination, value, sensitivity, capability, and commitment. While these characteristics are of no importance on standardized testing, Costa believed that these habits of mind are of utmost importance in student performance. Costa then explained that these habits of mind

are, "characteristic not only of superior students but also of peak performers at home, on the athletic field, in the government, at church, and in corporations. The goal of education, therefore, should be to develop and reinforce these habits of mind" (p. 85).

Broughton (2004) disagreed with the command that standardized, high-stakes testing has taken over a complete and well-rounded curriculum, aimed at educating the whole child. Broughton wrote, "The freedom for students to pursue independent learning pathways and the autonomy of their expression" (p. 585). Many researchers agree that there is more than one way for students to learn. Additionally, the more ways that an idea is presented, the better chance the student has to make a meaningful connection with the subject, and truly learn it (Aprill, 2001;Godfrey, 1992; Gullatt, 2007). Most of the assessments collide with expression, freedom, and creativity, which are at the core of visual art education (Broughton, 2004). It is interesting to note that in states without high-stakes testing mandates, that students showed greater statistically significant gains (Amrein & Berliner, 2002). Additionally, Amrein and Berliner (2002) found little correlation between high-stakes tests and student scores on tests such as the NAEP (National Assessment of Educational Progress), ACT and SAT.

Measuring Student Understanding

The research indicated that standardized testing is not always the best way to measure student understanding. Outside factors, such as the standards-based reform movement, have had a greater impact on arts education than the art education establishment (Eisner, 2000). Concerning the need for motivating, exciting curriculum and educational experiences, Arts Education Policy Review (2001) wrote, "It means that

teaching - however you define it- should strive to be a thing of beauty. As standards are more and more stressed, as they should be, let us also stress the spirit of élan and commitment and style that will motivate students to reach as high as they can" (p. 35). However, NCLB mandated that school curriculum is driven by the results of standardized testing. According to NCLB, "In order to provide a quality education for every child in America, we must first test them to find out which children are not learning at the level or pace necessary to keep up" (p. 37). Chapman (2004) and Meyer (2005) believed that in most states, instructional time for art experiences will be reduced because the arts have not be included in the overall design to boost test scores.

Reardon (2005) reported that public school teachers and administrators in Dallas, TX are boosting student achievement by directly integrating arts into the school curriculum. Showing adequate yearly progress is intended to hold schools accountable for reaching educational goals, but often results in lack of class time allowed for teaching creative thinking skills (Neill, 2000). Neill wrote, "Even when efforts at memorization 'succeeds' in raising test scores, the learning is neither substantial nor long lasting" (p. 512). Teaching to the test rarely results in the student truly learning the subject. Rather than improve teaching, test-driven reform undermines it. Thus, it seems that what research shows is best for student performance, and what the NCLB law mandate are in direct opposition to each other. In the frenzy to boost standardized test scores, many school districts are re-evaluating the focus of student achievement, leaving arts out of the curriculum equation (Cavanagh, 2006; Manzo, 2006; Tambucci, 2006).

The effect of testing policies on art instruction and other subject areas warrants

further research (Spohn, 2008). According to Spohn, there is no evidence that this practice helps students acquire knowledge for the long term. Concerning testing policies, Spohn (2008) wrote, "Understanding the amount of time schools spend on testing and retesting will bring to light the amount of instructional time that is lost in the classroom, because students are not in a state of learning when they are subjected to phases of testing and retesting" (p. 10).

Previous Research Concerning Visual Art and Creativity

In a study by Duffy (1979), aesthetic sensitivity and creativity as measured on the Torrance Test of Creative Thinking (figurative, form A) had no correlation. "None of the creativity measures was associated with aesthetic sensitivity" (p. 2). If aesthetic sensitivity and creativity are not related, then it could be possible to teach a student how to be creative, even if the student was not artistically gifted or inclined. This study shows that artistic giftedness and creativity are not necessarily related, and not dependent upon each other. In a review of 156 different creativity enhancement programs, Scott, Leritz, and Mumford (2004) concluded that programs based on experience in mental imaging were generally less effective than those based on idea production or cognitive training.

An empirical study of artistic learning conducted by Wilson (1966) showed that there was practically no difference in students' ability to assess visual art between children of the 5th, 7th, 9th, and 11th grade levels without visual art instruction. Wilson piloted a study called the Wilson Aspective Perception test, which included a pretest and a posttest. After a period of 12 weeks, the student's level of vocabulary and creativity of language increased. Eisner (1997) asserted, "The students apparently broadened the set

they brought to the perception of art. They learned that there was more to look at in a painting than simply attending to its representational forms" (p. 137). Eisner asserted, "What I am arguing is that work in the arts makes special demands on the maker. It is these demands, what they elicit, that refine the imaginative and sensitive aspects of human consciousness" (p. 282). According to Ramsden (2003), "If the objective of teaching is to develop creative ability, then … and then to articulate their originating concepts in terms of those theories and philosophies" (p. 23).

Getzels and Csikszentmihalyi (1985) completed a 20-year long longitudinal study between 1963 and 1981 concerning creativity and problem-finding skills among art students at the School of the Art Institute of Chicago. The research followed the students after their time at the School of the Art Institute of Chicago into midlife. These researchers endeavored to discover if a correlation existed between creativity and problem finding, not problem solving. It seems that students with great creativity could look at a blank canvas, and discover a problem to solve. This idea of finding the problem is a very different undertaking than a student being given a problem and then being asked to solve it. This study showed that art experiences did help these students hone their creativity skills and find the problem. Students made comments like, "He taught me to ask the right kind of question- a question that is worthwhile, and a question that can be tackled with the tools available at the time" (p. 60).

Aesthetic content should be made explicit by focusing on philosophical issues or theories within a problem-based environment for learning. Constantino stated, "Problem based learning can organize the curriculum and challenge students to think deeply about

complex situations when it is applied as an authentic real-life application" (p. 224). Creative thinking does not necessarily require any particular context for discussion while creative education centers on the process of students' engagement of learning with others to become problem finders by questioning, examining, and revising. Emphasis on the dialogical process is a key concept of critical pedagogy (Kuster, 2006). This is an example of the change in creative thought processes that art experience can uncover.

Csikszenthmihalyi (1996) and his students at the University of Chicago conducted a study of creativity between 1990 and 1995. This study was qualitative in nature and involved in-depth analysis of interviews of creative people. There were three main conditions for selecting participants. Csikszenthmihalyi (1996) wrote, "The person had to have made a difference to a major domain of culture, he or she had to be still actively involved in that domain, and he or she had to be at least sixty years old" (p. 12). What the study showed, according to Csikszenthmihalyi (1996), was that creativity is an interaction between a person's thoughts and a sociocultural context. Young, Bain, and McCallum (2007) conducted a study concerning the divergent thinking skills as well as problem solving skills in Third Culture Kids. Third Culture Kids are children that have spend most of their lives in a country that is different from their passport, and then feel displaced when they return to their "home" country. This study used the Torrance Tests of Creativity as well as classroom based worksheets and real-life dilemmas. This study showed that the group of student with treatment did show marked improvement in creativity skills compared to the group that did not receive treatment. According to Perez-Fabello and Campos, (2004), "Future studies should further explore the influence of

specific kinds of creativity enhancing program on mental imaging, and the influence of training in mental imaging on various specific aspects of creativity" (p. 230). This study shows that instruction can affect creativity skills.

Chanda and Daniel (2005) conducted a case study that is particularly interesting because the focus of the study was on visual art course content. The data suggests that students learn equally as well, if not better, from multi-media interactions as assets to the curriculum. Opportunities to create, change, manipulate, and revise material for a project can help the student better understand the material. This study has implications for curriculum design in any class, but specifically supports the positive influence of active learning on the part of students. Visual art instruction allows for students to participate as active learners.

In a study relating thinking and study of the arts at the college level, Lampert (2006) used data from the California Critical Thinking Disposition Inventory (CCTDI). This study surveyed 131 undergraduates that were enrolled at an urban, public university. The sample compared art students to non-arts students, and freshmen to juniors/seniors. When the data from the groups was compared, the juniors/seniors showed a significantly higher mean score. There was no statistically difference in overall means between arts and non-arts students. Although critical thinking is clearly a different idea altogether than creativity, Lampert's study is similar to this one in comparing thinking skills between arts and non-arts students. The arts students did have significantly higher scores on subscales of the instrument in truth-seeking, maturity, and open-mindedness. The results of this study offer evidence that the arts enhance the disposition of students to think critically

(Lampert, 2006).

Measuring Creativity

According to Freedman (2007), policy makers in postindustrial countries are placing a new emphasis on creativity. Freedman asserted, "What is variously called the creative sector, creative industries, and the creative class, includes producers of a wide range of visual culture, from fine arts to popular arts (such as film, television, architecture, crafts, comics, toys, folk art, computer games, advertisements, and fashion)" (p. 205). This economic growth is becoming so influential that politicians and business leaders are being forced to take notice.

The difficulty with creativity as a goal of education, especially art education, is in the measurement. It is difficult to measure creativity on a standardized measurement. The State of Illinois banned the use of the word creativity in the statement of art educational goals because creativity is difficult to measure with a standardized, multiple-choice test (Freedman, 2007).

Furthermore, a study by Han and Marvin (2002) suggested that creative processes may be domain specific. A child that may have outstanding divergent thinking skills in mathematics may have difficulty in a creative storytelling activity. This study reminded educators to be careful not to exclude a student from a creative or gifted program merely because he/she doesn't score well on a divergent thinking test. Han and Marvin (2002) asserted that the use of multiple assessments in diverse domains and performance-based assessment within real learning contexts are essential to assessing properly the different kinds of creative abilities in various children. According to Kim (2006), it is easy for

educators to choose to separate students by IQ as a means to measure aptitude, however because creativity is not directly linked to IQ, this grouping runs the risk of some students being left unnoticed even though they might be gifted in creativity.

The Torrance Test of Creativity is the most widely used measure of creativity (Davis, 1997). Originally written by Torrance in 1966 and has been revised five times, with the latest revision in 1998 (Kim, 2006). According to the TTCT figural manual (Torrance, 1990), the interrater reliability of the test is above .90. Kim (2006) developed a research study to determine if the TTCT could measure multidimensional creativity. In Kim's study, the chi-square difference tests were significant, indicating that the two-factor model fit significantly better than the one factor model. This difference indicated that the TTCT did indeed measure multidimensional creativity. Kim wrote, "Results indicate that the innovative factor is loaded by fluency, originality, and resistance to closure whereas the adaptive factor is loaded by elaboration, abstractness of titles, and creative strengths" (p. 255).

Theoretical Framework

This study is based upon theories by: Eisner (2002), Gardner (2006), and Csikszentmihalyi (1965, 1996). Eisner wrote, "The arts have distinctive contributions to make (to that end) through their emphasis on the expression of individuality and through the exercise and development of the imaginative capacities" (2002, p. 24). According to Eisner, there are important educational outcomes that are not based upon helping students get higher test scores in areas such as science or math. Junias (2007) wrote about Eisner's theory of art and creativity that, "One of the aims of arts education would be to develop

the learner's sensibilities, or perceive through the senses, and foster their imagination and creativity" (260). It is not the goal or desire of art education to aid in non-art outcomes (Eisner, 1998). What is important in the dispositional outcomes for art education is 1) a willingness to imagine possibilities that are not now, but may become, 2) a desire to explore ambiguity, to be willing to forestall premature closure in pursuing resolutions, and 3) to be willing to recognize and accept the multiple perspectives and resolutions that work in the arts celebrate (Eisner, 1998). Eisner (2006) stated, "Art provides canonical images that organize our world ... Sometimes these images are so powerful … difficult to see the world they address in any other way; art not only imitates life, life often imitates art" (p. 11). Additionally, Eisner believes that art is learning *not* to see as well as learning *to* see. These dispositional outcomes are a large portion of what is tested on the TTCT, the instrument used to measure creativity in this study. The goal of this study is to determine if art experience has an effect on creative thinking levels among students having visual art experience.

Gardner's theory of multiple intelligences (1993, 2006) described intelligence as a set of abilities, talents, or mental skills, which he called *intelligences*. Gardner (1993, 2006) wrote, "In light of a pluralistic view of the intellect the question immediately arises whether there is a separate artistic intelligence. According to my analysis, there is not" (p. 150). According to Davis (2000), multiple intelligences and the allowance of art experiences, creativity, and questioning in a learning situation encourages unique, unbridled thought. Davis wrote, "Works of art are particularly rich sources for the invitation and validation of multiple perspectives" (p. 339). Boldt and Brooks (2006)

wrote that, "Students who are focused and engaged will learn. Transcribing this knowledge onto an examination bubble sheet is secondary in the large scheme" (p. 224).

According to Gardner (2006), whether an intelligence is used for aesthetic reasons or not is an individual decision. He believed, however, that intelligence can be trained to be creative, such as in Project Zero. Project Zero is an educational research group at the Graduate School of Education at Harvard University, organized by Gardner. The aim of Project Zero is to understand and enhance learning, thinking, and creativity in the arts as well as humanistic and scientific disciplines at the individual and institutional level. It is a goal of this study to measure quantitatively if visual art training has an effect on the creativity levels among high school students. Hetland (2008), a Project Zero researcher wrote, the recent research at Project Zero shows that serious instruction in visual arts teaches habits of higher-order thinking that help students develop capacities to recognize the hidden roots of problems, make careful choices in ambiguous circumstances and seek and synthesize the resources necessary to solve problems in novel ways. High-quality arts education helps students develop important critical and creative thinking that is underdeveloped when schools dedicate themselves only to students' success on tests. According to Hetland:

> Far from being irrelevant in a test-driven education system, arts education is a necessary antidote to the narrowed curriculum that too often results from the influence of high-stakes tests. As schools cut time for the arts, they may be cutting just the curriculum that would build the innovative leaders of tomorrow. (p. 14)

Csikszentmihalyi (1965) wrote concerning his theory of creativity and cognitive thought, "Perhaps the really significant work is the one where the two thought processes are exploited to their full limits, and converge in a product high on both technical skill

and imagination" (p. 116). Csikszentmihalyi (1997) asserted that the conventional roles of education have traditionally been set by economic needs. In an age where businesses needed employees to read, write, and count at acceptable levels, those skills became the goals of the educational system. He wrote, "To see learning as basically a tool for economic productivity and social stability is a short sighted view" (p. 4).

This research seeks to present the case that there are exclusive and exceptional elements associated with art activities that warrant art a valued place on the curriculum. Experiences with art can transcend merely technical skills of creating a work of art. Decision making, thinking through a process, and using references to inspire new ideas are all ways in which art could contribute to a higher level of creativity in the student fortunate enough to have art experiences. Osborne (2003) wrote, "A common thread running through much of the literature relating to the arts highlights creativity, aesthetic appreciation, spirituality and ordering or making sense qualities that engagement in art can facilitate" (p. 415). Through art experiences, students learn ways of experiencing, developing, representing and understanding ideas, emotions, values and cultural beliefs. Gibson stated, "They learn to take risks, be imaginative, explore alternative solutions, engage in art criticism, develop, practice and refine techniques, share opinions and challenge definitions of art" (p. 113). The literature suggests that these activities, specific to art experiences, help students develop mature creativity skills.

The need for further research

Creativity in the classroom is the key to keeping students focused, engaged, and in attendance. Rolling Jr., (2006) asserted, "Taken further, the arts not merely ‘nice’—

they are *necessary* in the construction of a complete educational curriculum. Each tool of culture unlocks new aspects of other tools" (p. 115). Academic performance, class attendance, problem-solving skills, social development, and positive behavior all increase with arts programs (Americans for the Arts, 2004). Csikszenthmihalyi (1965) believed that an even loftier goal of education should be the teaching of students to think creatively and develop imaginative skills. According to Csikszenthmihalyi, this type of thinking leads to the control of consciousness, and ultimately happiness. He wrote, "Aesthetic experience consists of just this ability to transform blurred, boring, meaningless, or unbearable aspects of reality so that they become sharp, exciting, meaningful, and bearable" (p. 4). He continued:

> I do not know of any research that proves that such teaching strategies result in more imaginative, patient, creative students—but I have a strong hunch, and that hunch could well form the seed of a research project, somewhere down the track. (p. 5)

Claxton (2006) wrote, "Any masters students looking for a potential Ph.D. project, please note: if creativity is systematic, rather than an individual phenomenon, then there must be an outside influence affecting creativity levels" (p. 352). Gillham and Mcgilp (2007) stated

> A case is made for a form of narrative reporting (the Creative Process Journal) as a methodology for practice-integrated research in the arts. It is argued that this stage of research creativity, which applies in all domains of academic study but is often not reported, is fundamental to the kind of arts research which allocates practice a central role. (p. 53).

This study aimed to show if visual art instruction is an outside influence that could affect student creativity at the high school level.

Section 3: METHODOLOGY

Introduction

The aim of this study was to determine if there was a significant difference in the creativity scores of high school students who have and have not had visual art instruction experiences.

Research Question

Does visual art instruction have a statistically significant effect on the creativity levels among high school students?

Alternative Hypothesis

The creativity scores will be significantly higher for students who were enrolled in a high school visual arts course than for students who were not enrolled in a high school visual arts course.

Null Hypothesis

There will be no significant difference in the creativity scores of students who were enrolled in a visual arts course and students who were not enrolled in a high school visual arts course.

Research Design and Approach

This study used a quasi-experimental, pre-test, post-test control-group design. A postpositive approach will be used as the term refers to the understanding that when studying human behaviors or actions, researchers cannot be entirely positive of the results (Creswell, 2003). This type of philosophy is deterministic in the idea that a cause can affect an outcome. Creswell wrote, "An individual begins with a theory, collects data that

either supports or refutes the theory" (p. 7). Concerning this postpositivist philosophy, Khumwong (2004) wrote:

> The problem studied by the postpositivist reflects a need to examine causes that influence outcomes. It is also reductionism; testing selected variables that constitute hypothesis and research questions, so it is based on careful observation and measurement of the objective reality in the world. (p. 1)

The quasi-experimental quantitative method for investigating the research will be chosen instead of qualitative methods since the TTCT is a quantitative measure. Additionally, qualitative research focuses on interaction of groups with each other in a study, and for this study, interaction between students or groups is not what the researcher seeks to measure (Merriam & Associates, 2002). Quantitative measurement results in, "objective data resulting from empirical observations and measures. Validity and reliability of scores on instruments, additional standards for making knowledge claims, lead to meaningful interpretations of data" (Creswell, 2003, p. 153). The purpose of this quasi-experimental quantitative study is to produce objective, statistical data on which to base whether further study concerning visual art experience and its effect on creativity should be pursued.

The dependent variable for this study will be the participant's score on the TTCT. The independent variable for this study will be enrollment in the visual art course. Two random groups of 25 students will be tested using the TTCT (Figure A) (see Appendix A), using a pretest/post-test design. The TTCT was chosen as the instrument for this study because it is the most widely used test of creativity (Khatena, 1989). This test has been used successfully as a measure of creativity by over 2,000 researchers (Torrance,

1998) and data on the TTCT have been collected on an international scale (Houtz & Krug, 1995). This test is in no way a test of drawing ability, therefore students with drawing experience should have no advantage over students without drawing experience (Torrance, 1998).

This study compared creativity scores between students with and without visual art experience at the high school level. A pretest/post-test design was used along with a control group to determine if gains will be made in the area of creativity as measured quantitatively by the TTCT. Both groups of students will take a pre-test at the beginning of the semester and then both groups will take a posttest after one term (4 1/2 weeks) of instruction has taken place. The researcher's school uses a block scheduling system in which each class has twice the traditional instruction time per day, resulting in only 4 classes per day. This extended daily class time results in each day of instruction time equaling 2 days of instruction time on a traditional school calendar. Because of the extended class time each day, grading periods are shortened into 4 ½ week intervals, which is equal to 9 weeks of instruction on a traditional school calendar. The 4/12 weeks equivalent of a 9 week instructional period is called a term, and is considered by the school as half of a semester of instruction.

The test was not discussed nor scores revealed to the students until after the posttest is taken, eliminating the possibility of the student's learning how they scored as well as how their classmates scored before taking the posttest. The threat due to pre-testing was minimal as there was no way for the students to know if they had a high or low score on the test. Additionally, because the test was unusual, only released to

schools, and there is not an answer key, there was no way for the students to know what a highly scoring answer might be for the posttest. Even if a student remembered a question from the pretest, there would be no way for the student to research what a high scoring response would be. Finally, giving the same posttest after a term of instruction allows the researcher to accurately measure if the responses to the creativity questions have changed significantly. The test was scored by the researcher using the TTCT scoring guide and norms referenced manual provided by Scholastic Testing Service.

Population and Sample

The participants in this study were 50 high school students in a suburban East Tennessee high school. This particular high school has an enrollment of 1,450 students. The ethnicity of the school is as follows: 91.5 % Caucasian, 4.2% African-American, 1.5% Asian, 2.1% Hispanic, and 0.6% Native American/Pacific Islander.The graduation rate at this high school is 91% according to the By the Numbers Report (MHSby#07-08). This high school offered a complete fine arts curriculum including: drama, orchestra, band, choir, and visual arts. This sample of students was considered a convenience sample because the groups were from classes that were naturally formed.

The first group of 25 participants had no previous experience in a high school visual art class and will be enrolled in an introductory music theory class. This group consisted of 15 girls and 10 boys ages 13 to 15, all enrolled in the ninth grade at the researcher's school. Two of the girls and one of the boys received free or reduced lunches due to economic status. One of the girls is certified as having Attention Deficit Disorder as is on a special education teacher's caseload. All of these students were considered

average or above average achievers according to grade point average. None of these students have been socially promoted, resulting in being older than the average ninth grader. All of these students were on the university path for graduation, requiring a fine arts course in order to graduate.

The second group of 25 participants had experience in a high school visual art class and was enrolled in an introductory visual art class. This group consisted of 17 girls and eight boys ages 13 to 15, all enrolled in the ninth grade at the researcher's school. Three of the boys received free or reduced lunches due to economic status. None of the students were certified special education students. Four of the students live outside of the district and pay tuition in order to attend the school. All of these students were considered average or above average achievers according to grade point average. None of these students have been socially promoted, resulting in being older than the average ninth grader. All of these students were on the university path for graduation, requiring a fine arts course in order to graduate.

The researcher determined the sample size would be 25 because the number of students in the classroom acting as a control group is 30. Using the *t*-test to support the statistical data allowed for such a small sample group. This difference of five students allowed for the possibility that not all students will participate. Additionally, a time constraint exists for not including classes during the second semester of school.

Students in the control group, those without high school visual art instruction, were tested during an introductory music theory class. These students were placed in the class by the guidance counselors based upon their overall class schedules. The group of

participants with high school visual art experience was tested during the participant's introductory art class. Both groups of students were invited to take the TTCT. Participation will be completely voluntary. Thirty students from each group were invited and 25 students from each group accepted. Forms allowing students to participate in the study were sent home to parents outlining the study. Parents or guardians signed the consent form in order for the student to participate.

Curriculum for Treatment and Control Groups

The introduction to visual arts class is a beginning class consisting of art theory, history, and practice. During the first term, students learn the seven elements of art. The elements include: line, shape, value, texture, color, form, and space. Students experiment with these elements in creating individual art pieces based upon the element of the lesson. Students also are exposed to art history, allowing students to view historically significant works of art, and how to incorporate elements of these important works into the student's own work. Students keep a portfolio, and are asked to review their own work and write a short synopsis of their product including: following directions, detail, craftsmanship, and uniqueness.

The foundations of music class is an introductory music class, designed to present the student with the basic knowledge and appreciation of music. The first term instruction includes styles of music, music history, as well as music recognition. The students listen to compact discs, watch musicals, compare music as well as begin to identify specific instruments and as musicians. This class is designed to initiate students into the world of music appreciation, and it's effect on society. This is not a music performance class and

the students have no contact with instruments. This class does fulfill the fine arts credit required for the university path.

Although both participating classes were under the umbrella of fine arts courses and both classes fulfill the fine arts credit requirement, they are opposite classes in other respects. The visual arts course deals with visual art and does not cover music in any form. The visual arts course is a hands-on course, designed to allow visual arts knowledge coupled with visual arts experiences. The visual arts students keep a portfolio of their work, and are asked to evaluate their personal progress. The music foundation class is not a hands-on course. This course is intended to teach student about music, why it's important, and appreciate the beauty of music in society. The students do not play, write, or experiment with their own musical interests in this class.

Data Collection

The researcher administered the creativity test to both groups in order to avoid student concern that the test could affect their overall class grade. All participants were assured that the test would have no effect on their grade. The group without visual art experience was tested during the researcher's colleague's introduction to music class. The researcher tested the group with visual art experience during a colleague's class in the researcher's classroom. Time allotted for the completion of the test for both groups was 90 minutes, although the TTCT duration is usually 30 minutes.

For completion of the creativity test, the participants were be asked to use the Torrance Tests of Creative Thinking (figural A) (see Appendix A). Both groups of participants were asked to mark their age and grade level on the test booklet. The test for

participants without visual art experience was pre-labeled according to their class roster number. The test for participants with visual art experience was also pre-labeled according to their class roster number. Since the test was measuring independent, creative thinking, no other instructions were given to allow the students to be as creative as possible. Participants had access to pencils and erasers and the researcher did not answer any questions during the test to avoid bias.

The researcher collected the TTCT tests from each testing session, and put them into separate envelopes. The envelope containing tests from the group without art experience was labeled group "1." The envelope containing tests and surveys from the group with art experience was labeled group "2." The TTCT test was administered twice during the fall semester of 2008, allowing for a pre and posttest. The researcher used the TTCT streamlined scoring sheet (see Appendix B) to score the creativity test.

Instrumentation

The instrument used for this study was the TTCT (figural, form A). Figural TTCT Form A (Torrance Tests of Creative Thinking: Thinking Creatively with Pictures) was administered. The age range for this test was kindergarten through adult. The actual student working time on the figural test was 30 minutes. The test had three subtests: Picture Construction, Picture Completion, and Parallel Lines. The Picture Construction portion of the tests asked the participants to think of a picture or an object that they could draw using a provided curved shape. The Picture Completion portion of the test asked the participant to add lines to incomplete pictures in order to make an interesting object or picture. In the Parallel Lines test, participants were instructed to make an original picture

out of pairs of straight lines. The Picture Construction was scored on originality and elaboration while Picture Completion and Parallel Lines was scored on fluency, flexibility, originality, and elaboration. These scores were converted into a standard T score.

Reliability

According to data presented in the Norms-Technical Manual (Torrance, 1998), inter- and intra-scorer reliability are reported as at least .85 and most frequently above .90. Torrance wrote, "It can be noted that the reliability coefficients range from .86 to .99 and average .95" (p. 44). None of the differences between means and standard deviations approaches statistical significance.

Validity

Torrance (1998) addressed the subject of validity in the Norms-Technical Manual. In this manual, Torrance wrote about content validity that, "The TTCT makes is possible to determine whether or not children and young people identified as creative behave in ways similar to the ways in which eminent creative people of the past behaved when they were young" (p. 9). Torrance labeled such matters, "Concurrent Validity" (p. 9). Construct validity has been proven by over 40 years of creativity studies as well supportive information from a data base of over 2,000 publications concerning the TTCT. Torrance wrote, "The most persuasive evidence of validity is demonstrated in the longitudinal studies of creative achievement in real life" (p. 31).

Methods for Missing Data

If a participant did not finish the test entirely for whatever reason, did not show up to take the test, or decided during or after finishing the test that the test should not be used or scored, the test was not be counted as part of the study. Participants were not subject to any penalty for non-completion of the test or refusal to have the test scored for the purpose of this research.

Data Analysis

Significance is a statistical term that tells how sure the researcher is that a difference or relationship exists. After finding a significant relationship, it is important to evaluate its strength. Significant relationships can be strong or weak, significant differences can be large or small, significance depends mostly on sample size (Walonick, 2003).

When the sample size contains less than 30 participants, the *t*-test is often used (Rowntree, 1981). Because this study sample contained less than 30 participants, the sample standard deviation was not reliable as an estimate of the standard deviation in the population. Since this study sample was less than 30 participants, a *t*-test was used. A *z*-test is usually used to calculate the significance of standard deviation; however, it is accurate only with large samples, eliminating the use of the z-test for this study. The study used a one-tailed *t*-test. The difference between the means was considered statistically significant if it were greater than or equal to .05.

The researcher chose a one-tailed independent *t*-test for data analysis. SPSS (2005) software was used to run the data analysis to measure the variance in scores between the groups of students with and without visual art experience. The *t*-test assessed

if the means of the two groups are statistically different from each other. The *t*-value were be positive if the first mean was larger than the second and negative if it was smaller. Once the *t*-value was computed by the *t*-value formula using SPSS software, the *t*-value was determine by a table of significance to test whether the ratio was large enough to say that the difference between the groups was not likely to have been a chance finding. The level of significance, or Alpha level, for this test was set at .05. The degree of freedom in the *t*-test is the sum of participants in both groups minus two. When given the Alpha level, the degree of freedom, and the *t*-value, a standard table of significance were used to determine if the *t*-value was large enough to be significant.

Limitations/delimitations

Limitations of the study included that the study was completed at one high school, in East Tennessee. This study sample was relatively small and cannot assume that if this test were administered to all other high school students nationwide, it would produce the same results.

Summary

The intent of the study was to determine if a significant difference exists in creativity levels among high school students with and without visual art experience. The researcher will use the TTCT (figural form A) to measure creativity. One group of participants consisted of students currently enrolled in an introductory music survey class, having no previous high school art experience. These students were randomly selected for the class by the guidance office. The other group of participants consisted of students who were currently enrolled in an introductory visual art class. The researcher

scored the creativity tests using the TTCT streamlined scoring guide. The results were analyzed using SPSS software (2005) to determine if a significant difference was found between the scores of the two groups of participants.

The results of this analysis showed a strong connection between visual art experience and creativity. Because a statistically significant connection existed between visual art experience and creativity according to this study, further study could be conducted in order to support data-driven decision-making concerning the importance of visual arts classes in the development of creativity skills. The literature review showed that being able to think creatively is an important skill for students to develop in order to be successful in the current global economy. The study results may possibly lead to a greater support for visual arts curriculum and scheduling of art classes at the high school as well as bolstering district financial support, leading to positive social change. The results of this test could inspire other research on a broader scale concerning visual art instruction and its impact on creativity skills among high school students. Further study could include the effects of visual art instruction on critical thinking skills among students at the high school level.

CHAPTER 4:

PRESENTATION AND ANALYSIS OF DATA

Introduction

The hypothesis for this study embraced the belief that students who have had visual art experiences at the high school level show significantly higher levels of creativity skills than students without visual art experiences at the high school level. The alternative hypothesis was that the creativity scores were significantly higher for students who were enrolled in a high school visual arts course than for students who were not enrolled in a high school visual arts course. The null hypothesis was that there was no significant difference in the creativity scores of students who were enrolled in a visual arts course and students who were not enrolled in a high school visual arts course.

Data concerning creativity skills were collected from a sample of $n = 50$ high school students. The data were collected from a creativity test (see Appendix A) administered to two high school participants groups of ninth graders. Half of the participating students were enrolled in an introductory visual arts course while the other half of the students were enrolled in an introduction to music course. A pre and posttest of the TTCT (see Appendix A) was given to both groups in order to determine the statistical significant difference in creativity scores occurred after one term of visual arts instruction as opposed to the introductory music which was more along the lines of a history course.

This researcher conducted this study in an effort to demonstrate the value of art education in schools and the possibility of creating social change by bolstering efforts

that may increase visual art education in public schools. The analyzed data of the study indicated that there is a connection between creativity skills and exposure to visual arts. The analyzed data of the study also indicated that visual art experiences may benefit creativity and lead to positive social change by providing a means through which educators can develop creativity skills. The findings of this study might assist education stakeholders to address issues of standardized testing requirements minimizing the importance of visual art instruction at the high school level. The generation of data will be described in the next section.

Generation of Data

The researcher used a quasi-experimental nonequivalent control group design in order to examine the relationship between visual arts high school curriculum and the creativity skills of students having experience in a visual arts class. The data were gathered through the TTCT tests (see Appendix A) administered to ninth graders. Nonequivalent groups were selected due to the administrative strategy used by the guidance counselors to assign students to elective fine arts classes.

For the purpose of this study, the researcher selected two intact fine arts classes. Specifically, one class was registered in the Foundation of Music course and that class was the control group. The second class was registered in the Introductory Visual Art course and that class was the treatment group.

The study's internal validity was improved by the use of the control group. A pretest and posttest of TTCT was utilized in order to collect data and determine if a statistical significant difference in creativity test scores existed between the control and

the treatment groups.

Collection of Data

The researcher collected pretest data from a visual arts class and an introductory music class during the first four weeks of classes, after all scheduling conflicts were resolved by guidance counselors. The posttest data was collected following the one school term treatment period, which is 4 and a half weeks.

The researcher administered the TTCT creativity tests to both groups of students allowing a pretest and posttest data collection. Specifically, two classes were tested for creativity skills using the TTCT at the beginning of the semester, before any in-depth instruction. After one school term of instruction, the participating students were tested again using the TTCT in order to determine if any growth in creativity skills occurred.

The TTCT tests were neither discussed nor scores were revealed to the participating students until after the posttest was taken, eliminating the possibility of the student's learning how they scored as well as how their classmates scored before taking the posttest. Giving the same posttest after a school term of instruction allowed the researcher to measure the responses to the creativity questions accurately. The TTCT tests were scored by the researcher using the scoring guide and norms referenced manual provided by Scholastic Testing Service.

The participants were students enrolled in a suburban East Tennessee high school. This particular high school has an enrollment of 1,450 students. The ethnicity of the school is as follows: 91.5 % Caucasian, 4.2% African-American, 1.5% Asian, 2.1% Hispanic, and 0.6% Native American/Pacific Islander. The graduation rate at this high

school is 91% according to the By the Numbers Report (MHSby#07-08). The organization of data will be described in the next section.

Organization of Data

The first group of 25 participants had no previous experience in a high school visual art class and was enrolled in the Foundations of Music course. This group consisted of 15 girls and 10 boys ages between 13 and 15, all enrolled in the ninth grade at the researcher's school. All of these students were considered average or above average achievers according to their grade point average. None of these students were socially promoted, resulting in being older than the average ninth graders. All of these students were on the university path for graduation, requiring a fine arts course in order to graduate.

The second group of 25 participants had no previous experience in a high school visual art class and were enrolled in the Introductory Visual Art course. This group consisted of 17 girls and 8 boys ages between 13 and 15 all enrolled in the ninth grade. All of these students were considered average or above average achievers according to their grade point average. None of these students were socially promoted resulting in being older than the average ninth graders. All of these students were also on the university path for graduation requiring a fine arts course in order to graduate.

Students in the control group were those without high school visual art instruction and were tested during the Foundation of Music course. These students were placed in the class by the guidance counselors based upon their overall class schedules.

Both groups of participating high school students with visual art experience were tested during the Visual Art course. Both groups were invited by the researcher to take the TTCT tests. Participation was completely voluntary. Consent forms were sent to parents or guardians outlining the study. Those students of parents or guardians who signed the consent form participated in the study. The recording of the collected data will be described in the next section.

Recording of Data

The researcher administered the creativity test to both groups in order to avoid student concern that the test could affect their overall class grade as it was indicated in the consent forms. The group without visual art experience was tested during the researcher's colleague's the Foundation of Music class. The researcher tested the group with visual art experience during a colleague's class in the researcher's classroom.

The tests for participants without and with visual art experience were pre-labeled according to their class roster number. Since the TTCT test measures independent and creative thinking skills, no other instructions were given to the participants in order to allow them to be as creative as possible. Participants had access to pencils and erasers and the researcher did not answer any questions during the test to avoid bias.

The researcher collected the TTCT tests from each testing session and put them into separate envelopes. Specifically, the envelope containing tests from the group without art experience was labeled group "1." The envelope containing tests from the group with art experience was labeled group "2." The TTCT test was administered twice during the fall semester of 2008 allowing for a pretest and posttest. The researcher used

the TTCT streamlined scoring sheet (see Appendix B) to score the TTCT test. The analysis of the data will be described in the next section.

Analysis of Data

After the researcher scored the TTCT tests using the TTCT Scoring Manual, a pretest and posttest raw subscore was calculated for each student. The raw subscores from the pretest and posttest of both groups of participants were important in determining the increases or decreases during the school term as well as the National Percentile (NP) of each student. The TTCT Norms Technical Manual was utilized in order to identify the norms based on students' performance including standard scores and NP ranks for each subscore (i.e., fluency, originality, elaboration, abstractness of titles, and resistance to premature closure). The manual also included composite measures, average standard scores, creativity index, and NP ranks for the two composite scores.

The NP in each scored area (i.e., fluency, originality, elaboration, titles, and closure) was determined by locating the proper table (see Appendix A) according to grade level in the Norms Technical Manual. The corresponding NP and Standard Score (SS) were determined for each scored area. Each area was calculated using the aforementioned manual in order to determine the NP and SS.

The researcher computed the average standard score and determined its national percentile (i.e., SS or NP). The average standard score was computed by adding the five standard scores then dividing the total by five.

The final step was to compute the Creativity Index (CI) and find its NP. CI was found by adding the creative strengths checklist score to the average standard score.

The researcher chose a one-tailed independent *t*-test for data analysis. SPSS was used to run the data analysis to measure the variance in scores between the groups of students with and without visual art experience. The level of significance or Alpha level, for this test, was set at .05. The degree of freedom in the *t*-test is the sum of participants in both groups minus two. When given the Alpha level, the degree of freedom, and the *t*-test value, a standard table of significance was used to determine if the *t*-test value was large enough to be significant. The findings of the analyzed collected data will be described in the next section.

Findings

Comparisons of Pretest and Posttest Scores for Both Groups

For the purpose of this study, fluency was defined as the number of relevant responses and indicates the ability to produce a number of figural images. For the fluency variable, there were 25 participants in the music group and 25 participants in the visual art group giving $n = 50$ participants. For the same variable and for the music group using the pretest sores, $M = 56.44$, $SD = 22.64781$ were the descriptive statistics. For the variable of fluency in the music group using the posttest scores, $M = 57.68$ and $SD = 21.94068$ were computed. Thus, for the fluency variable, the mean of the posttest scores for the music group was higher than the mean of the pretest group.

For the variable of fluency in the analysis of the music group pretest compared to the music group posttest, equal variances were assumed. The analysis indicated that there was no statistical significance between the pretest and the posttest, $p = .845$, $t = .197$, and $df = 48$.

Table 1

Music Group Fluency Pre and Posttest Scores

Music Group	*M*	*SD*	*t*	*p*
PreTest	56.44	22.64781	.197	.845
PostTest	57.68	21.94968		

For the variable of fluency in the visual art group pretest, $M = 57$, $SD = 23.03801$ were the descriptive statistics. For the variable of fluency in the visual art group posttest, $M = 70.08$, $SD = 19.27632$ meaning that this mean was higher than the mean for the originality pretest group.

For the variable of fluency in the visual art group pretest compared to the visual art group posttest, equal variances were assumed. The analysis indicated that there was a statistical significance between the pretest and the posttest scores, $p = .034$, $t = 2.177$, and $df = 48$. This significant increase in scores indicates that visual art experience had a positive impact on the creativity levels among the participants in the area of fluency.

Table 2

Visual Art Group Fluency Pre and Posttest Scores

Visual Art Group	*M*	*SD*	*t*	*p*
PreTest	57	23.03801	2.177	.034
PostTest	70.08	19.27632		

Originality in this study was defined as the number of unusual yet relevant ideas determined by statistical infrequency and shows an ability to produce uncommon or unique responses. For the variable of originality in the music group pretest, $M = 80.52$,

SD = 13.65076 were the descriptive statistics. For the variable of originality in the music group posttest, *M* = 82.12 and *SD* = 12.21106, this mean is higher than the mean of the pretest group.

For the variable of originality in the analysis of the music group pretest compared to the music group posttest, equal variances were assumed. The analysis indicated that there was no statistical significance between the pretest and the posttest, *p* = .664, *t* = .437, and *df* = 48.

Table 3

Music Group Originality Pre and Posttest Scores

Music Group	*M*	*SD*	*t*	*p*
PreTest	80.53	13.65076	.437	.664
PostTest	82.12	12.21106		

For the variable of originality in the visual art group pretest, *M* = 84.24, *SD* = 10.94029 were the descriptive statistics. For the variable of originality in the visual art group posttest, *M* = 91.16, *SD* = 6.87192, this mean is higher than the pretest group.

For the variable of originality in the visual art group pretest compared to the visual art group posttest, equal variances were assumed. The analysis indicated that there was statistical significance between the pretest and the posttest, p = .014, t = 2.678, and df = 48. This significant increase in scores indicates that in the area of originality, visual art experience had a positive impact on the creativity levels among the participants.

Table 4

Visual Art Group Originality Pre and Posttest Scores

Visual Art Group	*M*	*SD*	*t*	*p*
PreTest	84.24	10.94029	2.678	.014
PostTest	91.16	6.87192		

Elaboration was defined as the number of details used to extend a response. For the variable of elaboration in the music group pretest, *M* = 93.84, *SD* = 12.23274 were the descriptive statistics. For the variable of elaboration in the music group posttest, *M* = 98 and *SD* = 2.5, this mean is higher than the pretest group.

For the variable of elaboration in the analysis of the music group pretest compared to the music group posttest, equal variances were assumed. The analysis indicated that there was no statistical significance between the pretest and the posttest, *p* = .102, *t* = 1.666, and *df* = 48.32.16

Table 5

Music Group Elaboration Pre and Posttest Scores

Music Group	*M*	*SD*	*t*	*p*
PreTest	93.84	12.23274	1.666	.102
PostTest	98	2.5		

For the variable of elaboration in the visual art group pretest, M = 76.16, SD = 22.23676 were the descriptive statistics. For the variable of elaboration in the visual art group posttest, M = 87.68, SD = 12.29404, this mean is higher than the mean for the originality pretest group.

For the variable of elaboration in the visual art group pretest compared to the visual art group posttest, equal variances were assumed. The analysis indicated that there

was a statistical significance between the pretest and the posttest, $p = .028$, $t = 2.267$, and $df = 48$. This significant increase in scores shows that in the area of elaboration, visual art experience had a positive impact on the creativity levels among the participants.

Table 6

Visual Art Group Elaboration Pre and Posttest Scores

Music Group	*M*	*SD*	*t*	*p*
PreTest	76.16	22.23676	2.267	.028
PostTest	87.68	12.29404		

Abstractness of titles (referred to as titles) is the unique verbal representation of the drawing, the degree beyond labeling based on the ideas that abstractness requires creative thought. It measures the degree a title moves beyond concrete labeling of the pictures drawn (Torrance, 1966). For the variable of originality in the music group pretest, $M = 93.44$, $SD = 12.22047$ were the descriptive statistics. For the variable of originality in the music group posttest, $M = 98$ and $SD = 2.5$, this mean is higher than the mean of the pretest group.

For the variable of titles in the analysis of the music group pretest compared to the music group posttest, equal variances were assumed. The analysis indicated that there was no statistical significance between the pretest and the posttest, $p = .074$, $t = 1.828$, $df = 48$.

Table 7

Music Group Titles Pre and Posttest Scores

Music Group	*M*	*SD*	*t*	*p*

PreTest	93.44	12.22047	1.828	.074
PostTest	98	2.5		

For the variable of titles in the art group pretest, *M* = 84.24, *SD* = 10.94029 were the descriptive statistics. For the variable of originality in the art group posttest, *M* = 91.16, *SD* = 6.87192, this mean is higher than the pretest group.

For the variable of titles in the visual art group pretest compared to the visual art group posttest, equal variances were assumed. The analysis indicated that there was a statistical significance between the pretest and the posttest, *p* = .011, *t* = 2.744, *df* = 48. This significant increase in scores shows that in the area of titles, visual art experience led to an improvement in creativity levels among the participants.

Table 8

Visual Art Group Titles Pre and Posttest Scores

Visual Art Group	*M*	*SD*	*t*	*p*
PreTest	84.24	10.94029	2.755	.011
PostTest	91.16	6.87192		

Resistance to premature closure (referred to as closure) is the degree of psychological openness based on the belief that creative behavior requires a person to consider a variety of information when processing information and to keep an open mind (Torrance, 1966). For the variable of resistance to closure in the music group pretest, *M* = 40.36, *SD* = 21.4862 were the descriptive statistics. For the variable of resistance to

closure in the music group posttest, *M* = 41.52 and *SD* = 18.5991, this mean is higher than the mean of the pretest group.

For the variable of resistance to closure in the analysis of the music group pretest compared to the music group posttest, equal variances were assumed. The analysis indicated that there was no statistical significance between the pretest and the posttest, *p* = .839, *t* = .204, and *df* = 48.

Table 9

Music Group Resistance to Closure Pre and Posttest Scores

Music Group	*M*	*SD*	*t*	*p*
PreTest	40.36	21.4862	.204	.839
PostTest	41.52	18.5991		

For the variable of resistance to closure in the visual art group pretest, *M* = 84.24, *SD* = 10.94029 were the descriptive statistics. For the variable of originality in the visual art group posttest, *M* = 91.16, *SD* = 6.87192, this mean is higher than the pretest group.

For the variable of resistance to closure in the visual art group pretest compared to the visual art group posttest, equal variances were assumed. The analysis indicated that there was statistical significance between the pretest and the posttest, *p* = .010, *t* = 2.681, and *df* = 48. This significant increase in scores indicates that in the area of resistance to closure, visual art experience had a positive impact on improvement in creativity levels among the participants.

Table 10

Visual Art Group Resistance to Closure Pre and Posttest Scores

Visual Art Group	*M*	*SD*	*t*	*p*
PreTest	84.24	10.94029	2.681	.010
PostTest	91.16	6.87192		

For the variable of average standard score in the music group pretest, *M* = 84.7917, *SD* = 11.6282 were the descriptive statistics. For the variable of resistance to closure in the music group posttest, *M* = 115.2692 and *SD* = 135.53171, this mean is higher than the mean of the pretest group.

For the variable of average standard score in the analysis of the music group pretest compared to the music group posttest, equal variances were assumed. The analysis indicated that there was no statistical significance between the pretest and the posttest, *p* = .278, *t* = 1.097, and *df* = 48.

Table 11

Music Group Average Standard Score Pre and Posttest Scores

Music Group	*M*	*SD*	*t*	*p*
PreTest	84.7917	11.6282	1.097	.278
PostTest	115.2692	135.53272		

For the variable of average standard score in the visual art group pretest, *M* = 77.84, *SD* = 13.64331 were the descriptive statistics. For the variable of originality in the visual art group posttest, *M* = 89.28, *SD* = 7.54718, this mean is higher than the pretest group.

For the variable of average standard score in the visual art group pretest compared to the visual art group posttest, equal variances were assumed. The analysis indicated that there was statistical significance between the pretest and the posttest, *p* =

.001, *t* = 3.669, *df* = 48. This significant increase in the average standard scores indicates that standard scores of students receiving visual art instruction had a might higher average than students that did not receive visual art instruction.

Table 12

Visual Art Group Average Standard Score Pre and Posttest Scores

Visual Art Group	*M*	*SD*	*t*	*p*
PreTest	77.84	13.64331	3.669	.001
PostTest	89.28	7.54718		

For the variable of creativity index in the music group pretest, *M* = 83.68, *SD* = 11.73925 were the descriptive statistics. For the variable of creativity index in the music group posttest, *M* = 82 and *SD* = 0, this mean is lower than the mean of the pretest group.

For the variable of average standard score in the analysis of the music group pretest compared to the music group posttest, equal variances were assumed. The analysis indicated that there was no statistical significance between the pretest and the posttest, *p* = .478, *t* = .716, *df* = 48.

Table 13

Music Group Creativity Index Pre and Posttest Scores

Music Group	*M*	*SD*	*t*	p
PreTest	83.68	11.73925	.716	.478
PostTest	82	0		

For the variable of creativity index in the visual art group pretest, *M* = 73.44, *SD* = 12.48693 were the descriptive statistics. For the variable of creativity index in the visual art group posttest, *M* = 84.24, *SD* = 9.35539, this mean is higher than the pretest

group.

For the variable of creativity index in the visual art group pretest compared to the visual art group posttest, equal variances were assumed. The analysis indicated that there was statistical significance between the pretest and the posttest, $p = .001$, $t = 3.461$, and $df = 48$. The dramatic increase in scores of the overall creativity index of the participants in the visual art group was statistically significant, thus indicating that students that had visual art instruction had a markedly higher increase in creativity levels than students that did not have visual art instruction.

Table 14

Visual Art Group Creativity Index Pre and Posttest Scores

Visual Art Group	*M*	*SD*	*t*	*p*
PreTest	73.44	12.48693	3.461	.001
PostTest	84.24	9.35539		

Summary

The data analysis indicated that there was a statistically significant different increase between the pretest to posttest scores of the students in the visual art group in every category. Specifically, the overall creativity gains were compared in Tables 13 and 14 in the category of Creativity Index. In this analysis, the students in the visual art group made remarkably higher increases in the overall creativity score as indicated by the score of the visual art group pre/posttest comparison of $p = .001$. The data presented by this

quantitative study demonstrated positive increases in creativity scores among student receiving visual art instruction; both in each individual category as measured by the TTCT as well as an overall gain. While the results cannot be generalized to other populations and geographical areas, statistically significant results of this small sample indicate that visual art experience is indeed a valid venue through which students may be able to gain creative thinking skills.

CHAPTER 5:

SUMMARY AND CONCLUSIONS

Introduction

The motivation behind this study was the researcher's observance of increasing pressures for students to do well on high-stakes testing, regardless of the impact on overall student learning, curriculum design in the schools, or the disregard concerning the importance of teaching the student how to think creatively in order to solve problems. This researcher agrees with Pink (2006), Eisner (2002), Gardner (2006), and Csikszentmihalyi (1965, 1996) that a student's ability to think in a new way that requires synthesis of ideas and creativity is as important in a student's educational experience as scoring highly on a standardized test. Additionally, this researcher believes that a standardized test does not necessarily show what a student knows or can do. According to Pink, the future of the U.S economy will rely on creative thinking skills not the ability to produce products. Pink suggested that because Asia has become a global producer of inexpensive technology, the United States must become a nation of right-brain thinkers suggesting that students must be provided with a way to improve their creative thinking skills.

This research was designed to indicate that experience in a high school visual arts course could be a venue through which students could gain the capacity for enhanced creative thought. Much has been written concerning the importance of creative thinking; however, a gap in the research exists concerning what types of experiences or curriculum could improve student creativity. This research was intended to prove or disprove the

theory that visual art experience at the high school level could improve student creativity levels. The results of this study could help promote positive social change by supplying data confirming the necessity of a strong visual arts curriculum at the high school level, therefore providing a venue through which students could improve their creative thinking skills that will be necessary in the knowledge society.

Overview

This study was based upon theories by Eisner (2002), Gardner (2006), and Csikszentmihalyi (1965, 1996). Each of these researchers believed that there is a connection between art experiences and creativity. This quantitative study examined the impact of visual art experience at the high school level on creative thinking skills. This study used a quasi-experimental, nonequivalent control group design, using a convenience sample of two high school fine-arts classes comprised of one visual arts class and one foundations of music class. The visual art class was the group receiving treatment and the foundations of music was the control group. Pre and postassessments were measured using the Torrance Tests of Creativity after one term of instruction. In this study, one term is equivalent to 4.5 weeks of instruction because the high school is on block scheduling. The result of the t-test showed that a statistically significant difference exists in the creative thinking skills of students with and students without high school visual art experience.

A pre and posttest of the Torrance Tests of Creativity was given to two groups of students. The first group of 25 students was enrolled in a foundations of music course, while the second group of students was enrolled in an introductory visual art course. Each

group was given the TTCT as a pre and posttest. The researcher was not the instructor for either course, so the researcher gave each group the tests without student concern over the test affecting their final grades. The researcher scored the tests according to the TTCT scoring guide and used the TTCT Norms-Technical Manual Figural Form A. Statistical analysis of the student's pre and posttest scores from each group was calculated by using SPSS software. The Alpha level for significance was set at .05, and statistical significance or lack thereof was calculated for each individual category of the TTCT as well as the Average Standard Score and the overall Creativity Index.

Interpretation of Data

The research question, Does visual art instruction have a statistically significant effect on the creativity levels among high school students? was answered by a statistically significant increase between creativity levels and experience in a visual art course from the data analysis. According to the data analysis, visual art instruction has a positive impact on increased creativity levels among students that have had visual art experience at the high school level. In each category of the TTCT, the visual arts students had a statistically significant gain in the scores as well as a gain in the overall creativity levels as indicated by the Creativity Index Score. While there were slight gains in the creativity scores of the music students in all areas of the TTCT, except in the overall Creativity Index, these gains were not enough to be classified as statistically significant. Therefore, when comparing the pre and post test scores of the music students (the control group) to the pre and post test scores of the visual art students (the treatment group), the visual art students made statistically significant gains in creativity as measured by the

TTCT, while the music students did not. This statistically significant gain can be at least partially attributed to the students' experience in a visual arts course.

Implications for Social Change

Art integration can lead to an enriched curriculum as well as provide an opportunity for student to develop creativity skills. This research shows that visual art experience at the high school level can have a statistically significant positive effect on creativity gains. Gardner (2006) wrote, "In our global, wired society, creativity is sought after, cultivated, praised" (p. 77). He attested, "Companies that do not embrace innovation will soon be taken over by companies that do" (p. 78). Gardner contrasted the differing positions that the United States and China have taken concerning the arts. East Asia, according to Gardner, has become, “more receptive to teaching the arts in school, while the United States have moved toward uniform curricula and standardized tests” (p. 86). Curriculum that prepares students for the global marketplace must include courses that improve creativity skills. This study revealed that a relationship exists between visual art experiences and creativity skills among high school students, and therefore can help prepare students for the global marketplace. Because this study revealed that visual art has a positive effect on creativity skills among high school students, visual art should be included in a complete curriculum as a means to enhance student creativity, preparing students for the future, thus leading to positive social change.

This type of data could help bolster efforts to improve visual art curriculum offerings as well as provide evidence that visual art deserves to be a fully-funded program in U.S. schools. In an age of high-stakes test scores driving the educational

funding, data must be generated showing that art experience and creativity are essential to the development of U.S. students. Additionally, the results of this study could lead to social change as methods to develop creativity are documented and data is evidenced, leading to a deeper understanding of the importance of teaching subjects that encourage creative thinking. This research helps to fill the knowledge gap that exists concerning data about curriculum that is shown to help students make gains in creativity. This data could be used to inform parents of the statistics about visual art instruction and the positive effect on their students' creativity. This data could also be used to help support curriculum development, ensuring that visual art education is an integral part of the education of students entering the knowledge society.

Recommendations for Action

This study showed that (a) creative thinking is a necessary skill that students must possess to compete in today's global economy, and (b) visual art experience is a venue through which creative thinking skills can be obtained. Action should be taken to ensure that although creativity is not a skill that is routinely tested through state and federal testing mandates, it is a valuable and necessary skill and must be given pride of place in a contemporary curriculum. Visual Art experience is a valid means of helping students gain creative thinking skills, and should valued as an integral part of a curriculum that prepares students for a knowledge society.

This data could be used to bolster awareness of the necessity of visual art courses in a secondary school curriculum. Recommendations are: (a) data should be shared with the principals, curriculum coordinators, superintendent, and assistant superintendent

within the district to present a case necessitating strong visual arts course offerings for the school district; (b) Data should be shared with parents in the community to inform them of the importance of a strong visual art curriculum in the schools and the advantages of offering such courses have in the education of their children; (c) Students should be made aware of the necessity for creative thinking skills in the marketplace in which they will be expected to compete in the next few years, and the advantages that experience in visual art could give them in the area of creative thinking skills; (d) The data should be shared with teachers in other disciplines and well as guidance counselors in order to clarify the essential creativity skills taught in a visual art course, and start a dialogue between disciplines to encourage creative thinking activities; (e) Professional development coordinators could use the data justify activities for faculty and staff that enlightens them about the statistics concerning the need for creative thinking skills and the activities that can help improve them. Professional development activities could include lesson plans in all disciplines that encourage art creation as well as provide links from other disciplines into the visual art curriculum, encouraging team teaching to provide creative thinking experiences.

Recommendations for Further Study

This study showed that visual art education can and does have a statistically significant positive impact on student gains in creativity levels. This study was limited to one high school in East Tennessee. While the results were significant within this group of participants, further research on a much larger scale should be conducted in order to gain a clearer view of just how far-reaching the effects would be on a larger scale. City, state,

and nationwide research would provide even more data to prove a correlation between visual art instruction and improved creativity skills among high school students. Further study could include relationships between creativity and visual art instruction among students of all ages, not only high school students. A study that spanned the years of schooling from K-12 following students that have regular exposure to visual art and students that do not have regular exposure to visual art would make an interesting and much expanded study. The foundation of statistical data concerning visual art instruction and creativity skills was begun with this study.

Summary

In order for students to be prepared to compete in this global marketplace, they must be able to think creatively. Creative thinking and the ability to uniquely solve problems is a skill that cannot be globally outsourced to a world of efficient product producers. American education must create a new generation of creative thinkers to remain a world economic leader. Because this ability to think creatively is so imperative to our economic survival, it is essential that our schools design curriculum intended to cultivate a generation of creative thinkers. Visual art education is a venue through which students can learn creative thinking skills. This study has shown that there is indeed a statistically significant correlation between visual art experiences and increased creativity. Perhaps this study will inspire other educators that recognize the value of visual art education and it's impact on creativity, and further research will be conducted on its behalf.

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APPENDIX A:

Original data are available from the author. The test is available from Scholastic Testing Service, Inc., Bensenville, IL 60106; ststesting.com

APPENDIX B:

Original data are available from the author. The test is available from Scholastic Testing Service, Inc., Bensenville, IL 60106; ststesting.com

APPENDIX C:

ASSENT FORM

Hello, my name is Jeanie Parker and I am doing a project to learn about visual art instruction and student creativity. I am inviting you to join my project. I picked you for this project because of your visual art experience or inexperience at the high school level. I am going to read this form with you. You can ask any questions you have before you decide if you want to do this project.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree. I am also an art teacher at Maryville High School.

ABOUT THE PROJECT:
If you agree to join this project, you will be asked to:

Take a short drawing creativity test lasting about 30 minutes.

IT'S YOUR CHOICE:
You don't have to join this project if you don't want to. You won't get into trouble with me if you say no. If you decide now that you want to join the project, you can still change your mind later just by telling me. If you want to skip some parts of the project, just let me know.

It's possible that being in this project might take some thought and your time. But this project might help others by creating data to help visual arts programs.

PRIVACY:
Everything you draw during this project will be kept private. That means that no one else will know your name or what drawing you made. The only time I have to tell someone is if I learn about something that could hurt you or someone else.

ASKING QUESTIONS:
You can ask me any questions you want now. If you think of a question later, you or your parents can reach me at 982-1132, or my professor at peter.kiriakidis@waldenu.edu. If you or your parents would like to ask my university a question, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, extension 1210.

I will give you a copy of this form.

Please sign your name below if you want to join this project.

Name of Child _____

Child Signature _____

Parent/Guardian Signature _____

Researcher Signature _____

APPENDIX D:

CONSENT FORM

Hello, my name is Jeanie Parker and I am doing a project to learn about visual art instruction and student creativity. I am inviting your child to join my project. I picked your child for this project because of his/her visual art experience or inexperience at the high school level. I am going to read this form with your child. You can ask any questions you have before you decide if you want your child to do this project.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree. I am also an art teacher at Maryville High School.

ABOUT THE PROJECT:
If your child agrees to join this project, your child will be asked to:

> Take a short drawing creativity test lasting about 30 minutes. This test will be given twice with 4 ½ weeks in-between testing.

IT'S YOUR CHOICE:
Your child doesn't have to join this project if he/she doesn't want to. Your child won't get into trouble with me if he/she says no. If your child decides now that he/she wants to join the project, your child can still change his/her mind later just by telling me. If your want to skip some parts of the project, just let me know.

It's possible that being in this project might take some thought and your child's time. But this project might help others by creating data to help visual arts programs. There is no compensation for joining this research project.

PRIVACY:
Everything your child draws during this project will be kept private. That means that no one else will know your child's name or what drawing he/she made. The only time I have to tell someone is if I learn about something that could hurt your child or someone else.

ASKING QUESTIONS:
You can ask me any questions you want now. If you think of a question later, you can reach me at 982-1132, or my professor at peter.kiriakidis@waldenu.edu. If you or your child would like to ask my university a question, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, extension 1210.

I will give your child a copy of this form.

Please sign your name below if you want your child to join this project.

Name of Child _____

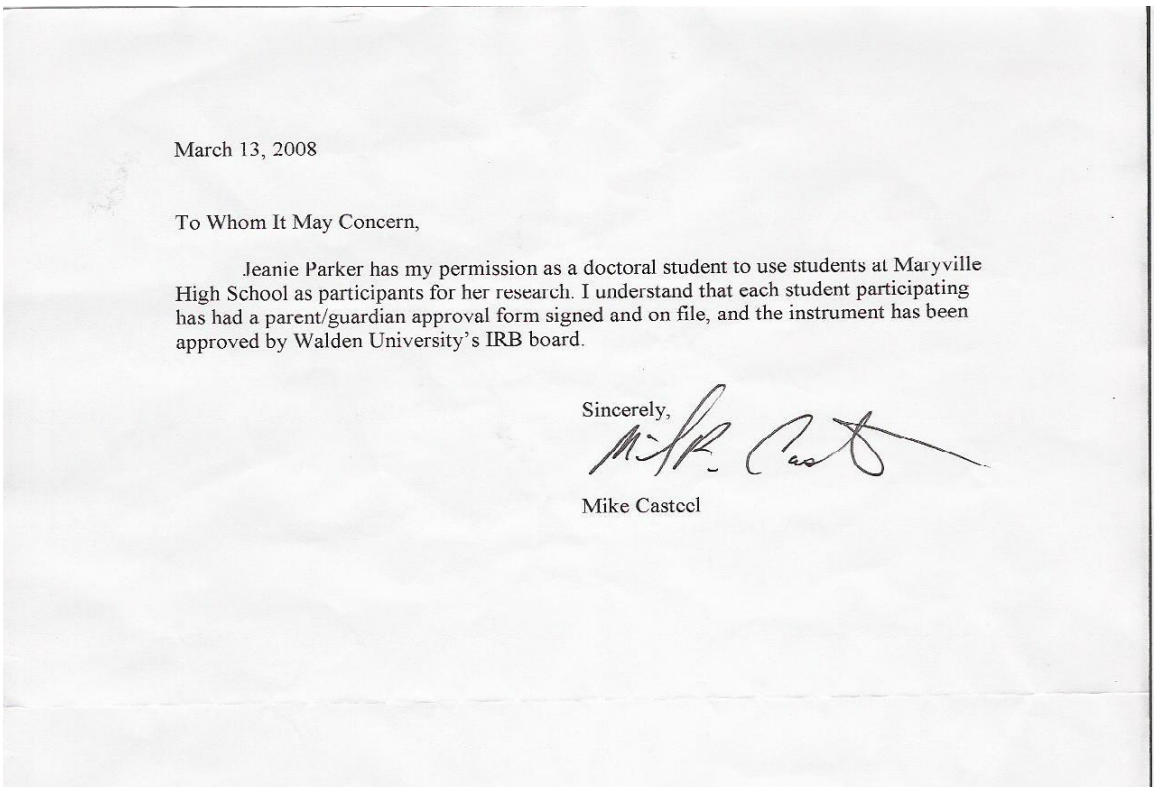
Child Signature _____

Parent/Guardian Signature _____

Researcher Signature _____

APPENDIX E:

Principal Permission Form



March 13, 2008

To Whom It May Concern,

Jeanie Parker has my permission as a doctoral student to use students at Maryville High School as participants for her research. I understand that each student participating has had a parent/guardian approval form signed and on file, and the instrument has been approved by Walden University's IRB board.

Sincerely,

Mike Castcel

APPENDIX F:

Scholastic Testing Service, Inc. Permission Form
April 2, 2008

Email letter of permission for Jeanie Parker

To: Members of the IRB in Walden University

From: John D. Kauffman, Ph. D.
Vice President, Marketing
Scholastic Testing Service, Inc.

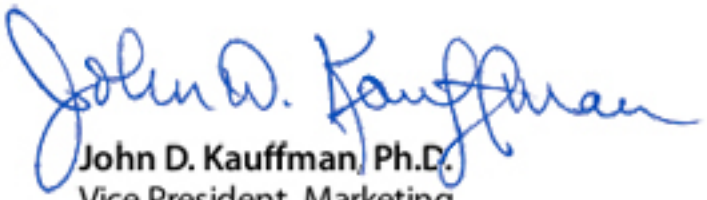
Jeanie Parker has contacted us and will comply with various aspects of the IRB application related to the research tool, Torrance Tests of Creative Thinking, she will be using, pending your approval.

She will purchase legal copies of the test response forms, the manual for administration, the manual for scoring, and the norms manual for raw score conversions.

We do not grant permission for the test or any part thereof to be placed into her dissertation. We suggest that there be instead this statement: "The original data are available from the author. The test is available from the publisher, Scholastic Testing Service, Inc., Bensenville, Illinois 60106, www.ststesting.com."

The test is not public domain.

If you have any questions, please let me know.



John D. Kauffman, Ph.D.
Vice President, Marketing
Scholastic Testing Service, Inc.
480 Meyer Road
Bensenville, IL 60106-1617
(800) 642-6787 • (866) 766-8054 (fax)
jksts@ststesting.com

Curriculum Vitae

Jeanie S. Parker, Ed. D.
1321 Belleau Dr., Maryville, TN 37804
Home: 865-380-0602 Cell: 865-789-3852
Email: jeanie_parker@yahoo.com

Education

- Walden University — Ed.D. Teacher Leadership, 2008
  Minneapolis, Minnesota — *Art Ed. Concentration, 4.0 gpa*
- Cumberland University — Master of Arts in Education, 2005
  Lebanon, Tennessee — *4.0 gpa*
- Rhodes College — Teacher Licensure, K–12, 1998
  Memphis, Tennessee
- Eastern Illinois University — B. A. Graphic Design, 1987
  Charleston, Illinois

Teaching Experience

- Maryville High School — 2000 - Present
  Maryville, Tennessee
- Cordova High School — 1997 - 2000
  Cordova, Tennessee (Shelby County)
- Germantown High School
  Germantown, Tennessee (Shelby County) — 1996 – 1997

Courses Taught

- AP Art History, Maryville High School
- Digital Photography, Maryville High School
- Painting - Maryville High School
  Oil, Acrylic, Pastels, Mixed media
- Drawing - Maryville High School
  Pencil, Charcoal, Pen and Ink, Colored Pencil

- Clay and Ceramics - Maryville High School
  Throwing, Handbuilding, Sculpture, Raku introduction
- Printmaking - Maryville High School
  Intaglio, Collagraph, Silkscreen, Dry Point, Woodcut, Aquatint
- Art I - Maryville High School, Cordova High School, Germantown High School
  Introduction to Art History, basic art techniques
- Art II - Cordova High School, Germantown High School
  Advanced drawing, experimental clay techniques, painting, printmaking
- Art III - Cordova High School
  Portfolio preparation, Depth and Breath concentration
- Stained Glass Techniques - Eastern Illinois University Union
  Basic techniques of copper foiling for stained glass
- Photography Darkroom Techniques - Eastern Illinois University Union
  Black and White developing techniques, pinhole photography
- Rembrandt Society for Gifted Children - Eastern Illinois University
  Basic photography and darkroom techniques

Educational Leadership Experience

• Visual Arts Chair	2005 - Present
• Professional Development Committee	2007 - Present
• Climate Committee	2004 - 2006
• Sophomore Class Sponsor	2002 - Present
• New Teacher Mentor	2004 - Present
• Student Teacher Mentor	Various Years
• MHS Chapter of National Art Honor Society Founder	2007 - Present
• Professional Development Presenter *Throwing on the potter's wheel*	2006
• Professional Development Presenter *Using technology in the art classroom*	2007
• Developer of Digital Photography Curriculum for MHS	2007
• Developer of A.P. Art History Curriculum for MHS	2007

Community Involvement and Art Contributions

• Children's Hospital of Knoxville *Festival of Trees painting contributor*	2006
• Foothills Film Festival Logo designer	2007
• Maryville Education Grant Foundation *Silent auction pottery contributor*	2006

- Maryville High School Art Club 2007
  Nursing home artwork contributor
- Maryville Kiwanis Club 2006
  Fundraising volunteer artist
- Green Meadow Swim Team 2006
  Silent auction pottery contributor
- Maryville High School Swim Team 2003 - 2005
  Volunteer worker
- Pilot Aquatic Club 2005 - 2008
  Volunteer worker
- Blount Area Aquatic Club 2000 - 2006
  Volunteer worker
- Southeastern Zone Swimming 2000
  Logo designer for Southeastern Swimming
- Maryville Parks and Recreation 2000
  Soccer coach

Publications and Grants

- National Endowment for the Humanities Grant 2008
- AP Art History curriculum for MHS 2007
- Maryville High School visual arts building needs plan- submitted to Johnson Architects for reference in upcoming building plan 2007
- Maryville City Schools Foundation funded grant 2005
- Shelby County Schools Graphic Design Curriculum 1998
- Webquest Digital Animation Lesson Plan 1998

Awards and Professional Affiliations

- Tennessee Governor's School for the Arts
  Outstanding Teacher Award 2007
- Kappa Delta Pi Education Honor Society 2005 - Present
- National Art Education Association 1996 - Present
- Tennessee Art Education Association 1996 - Present
- National Education Association 1996 - Present
- Maryville Education Association 2000 - Present
- Shelby County Education Association 1996 - 2000

Conferences

- Tennessee Art Education Association Conferences 1996 - Present
  Nashville, Memphis, Gatlinburg, TN -Various Years
- Tennessee Art Education East Regional Conference 2000 - 2007
  Knoxville, TN
- Tennessee Art Education West Regional Conference 1996- 2000
  Memphis, TN
- National Art Education Association Conference 1999
  Los Angeles, CA
- Advanced Placement Training (AP) Art History 2000
  Atlanta, GA

Computer Skills

- Statistical Interpretation utilizing *Statistical Package for the Social Sciences*
- Proficient in both Apple and Microsoft Word programs
- Newsletter Experience
- Webpage Design
- Webquest design
- Digital Image Manipulation
- Power Point
- Digital and Video Capture
- ilife, iphoto, imovie, iweb, experience

Educational Travel Experience

- Led Student Educational Travel Group to Europe 2006
  Paris, Lucerne, Pisa, Florence, Rome
- Led Student Educational Travel Group to Europe 2007
  Frankfurt, Munich, Innsbruck, Venice, Verona